Project Number: APEC CTI21/2007T

Asia-Pacific
Economic Cooperation

Education Guideline
On Standards and Conformance
for APEC Member Economies

APEC SCSC
Education
Guideline 1

APEC SCSC Education Guideline 1

Case Studies of How to Plan and Implement Standards Education Programs and Strategic Curriculum Model

APEC CTI SCSC

March 2008

Korean Standards Association (KSA)

Korean Agency for Technology and Standards (KATS)

Prepared By

Korean Standards Association (KSA)

Yeoksam-dong 701-7, Gangnam-Gu, Seoul, Korea

Tel: (82) 2 6009 4828, Fax: (82) 2 6009 4819

Email: dgchoi@ksa.or.kr Website: www.ksa.org

Produced For

APEC Secretariat

35 Henk Mui Keng Terrace,

Singapore 119616

Tel: (65) 6775 6012, Fax: (65) 6775 6013

Email: info@apec.org Website: www.apec.org

APEC#208-CT-03.2

Preface

The Joint Statement of the 18th APEC Ministerial Meeting, Hanoi in 2006, included an instruction of "*the APEC Ministers recognized the importance of standards education and encouraged members to develop reference curricula and materials to address the significance of standards and conformance to trade facilitation in the region."* Noting the instruction of ministers, APEC Sub-Committee on Standards and Conformance(SCSC), which has been working since 1994 in helping APEC Economies to address key issues in standards and conformance, initiated a project titled *APEC Strategic Standards and Conformance Education Program in 2007.*

The project was proposed by Republic of Korea, and other seven co-sponsoring member economies - People's Republic of China, Indonesia, Japan, Singapore, Thailand, United States, and Vietnam under the umbrella of APEC SCSC. The project was jointly funded by APEC and Korean Agency for Technology and Standards (KATS).

This APEC SCSC Education Guideline 1 – *'Case Studies of How to Plan and Implement Standards Education Programs and Strategic Curriculum Model'* is the first publication from the project phase I - Case Studies and Curriculum Development. This Guideline is prepared by Korean Standards Association, based on guidance of APEC SCSC and its Project Advisory Group on Education (PAGE). Attention should be drawn to the note that the findings from the survey may not be complete and the recommendations herein are those of the editor and contributors and do not necessarily represent the view of APEC or the member economies.

This APEC SCSC Education Guideline 1 and its future guideline series are designed to be a footstone to assist member economies in developing policy and in planning and implementing education programs in standards and conformance.

This APEC Education Guideline 1 includes following six Annexes:

Annex A. Project Survey Questionnaire

Annex B. National Strategy on Standards Education

Annex C. Summary List of 118 Standards Education Practices

Annex D. Detailed Fact Sheets of 88 Standards Education Practices

Annex E. Surveyed Lessons Learned

Annex F. Contact Information for Standards Education

Mr. Man Han Hwang, Project Overseer

Mr. Donggeun Choi, Project Editor

Korean Standards Association

Contents

Page

1. Background and objectives 1

2. Methodology and Definitions 2
2.1. Methodology of Survey and Research 2
2.2. Categorization to Formal and Professional Education 3
2.3. Terms 4
2.4. Acronyms 5
2.5. Structure of This Guideline 7

3. Case Study of Policy and Strategy 8
3.1. Majority of members have standards education strategy 8
3.2. More in-depth and wide-ranging strategies to be considered 9
3.3. APEC Economies' priority to Undergraduate Education 10
3.4. Education Committee Will be Useful 11

4. Case Study of Education Practices 12
4.1. General Activities Mainly by International Organizations 12
4.2. Primary/Secondary Education 13
4.3. Higher Education 16
4.4. Professional Education 20

5. Case Study of Surveyed Lessons 21
5.1. Clear Objectives and Target Oriented Programs 21
5.2. Make Teaching Materials Sexy 22
5.3. Preferred are 'Daily Life Examples or Case Studies' 23
5.4. Exciting is 'Learning by Doing' 24
5.5. As is the Good Teacher, So Will the Students Be 25
5.6. Leadership and Collaboration needed 26
5.7. Other Notable Lessons 27

6. Strategic Curriculum Model for Standards Education 28
6.1. Components 28
6.2. Who and Why - Objectives Influencing Program Design 29

6.3. What – Six Contents Modules in Brief 30
6.4. What – Six Contents Modules in Detail 32
6.5. How – Teaching Methods 37
6.6. Strategic Curriculum Model Abridged 38

7. Summary Conclusions 39

[Tables]

< Table 1 > Survey/Research Questionnaire 3
< Table 2 > Number of Education Practices 7
< Table 3 > Cases in/for Primary and Secondary Education 13
< Table 4 > Selected Seventeen Cases in/for Higher Education 16
< Table 5 > Classification of Skills in Professional Education 20
< Table 6 > Selected Practices in Leadership/Collaboration 26
< Table 7 > Strategic Curriculum Model Abridged 38

[Figures]

<Figure 1> why do we care about education? 1
<Figure 2> Classification of education programs 4
<Figure 3> Majority of members have standards education strategy 8
<Figure 4> Different Levels of Strategy 9
<Figure 5> Priority and Activity in Formal Education 10
<Figure 6> Priority and Activity in Professional Education 10
<Figure 7> Do we need an Education Committee? 11
<Figure 8> Analysis of Primary/Secondary Education Cases 14
<Figure 9> Selected images from Primary/Secondary Education Cases 15
<Figure 10> Analysis of Selected Seventee Cases in/for Higher Education 17
<Figure 11> Textbook Images from Higher Education Cases 19
<Figure 12> Fundamentals of Strategic Curriculum Model 28
<Figure 13> Differences in Formal vs. Professional Education 29
<Figure 14> Map of Six Contents Modules for Strategic Standards Education 31
<Figure 15> Various Methods in Teaching and Assessment 37

[ANNEX]

Annex.A. Project Survey Questionnaire Annex.1
Annex.B. Natinoal Strategy on Standards Education Annex.13
Annex.C. Summary List of 118 Standards Education Practices Annex.21
Annex.D. Detailed Fact Sheets of 88 Standards Education Practices Annex.37
Annex.E. Surveyed Lessons Learned Annex.209
Annex.F. Contact Information for Standards Education Annex.235

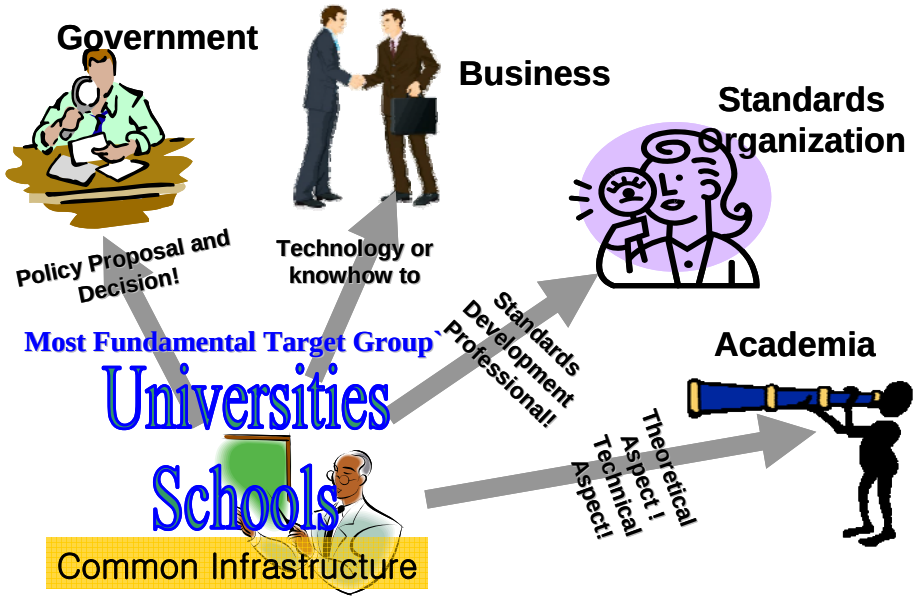
APEC SCSC Education Guideline 1

Case Studies of How to Plan and Implement Standards Education Programs and Model Curriculum Development

1. Background and objectives

It would be idealistic if students in schools or universities are educated about the fundamentals and implications of standards and conformance, and start their career in government, businesses, standards and conformance related organizations or research institutions as shown in <Figure 1>. However, majority of the just-graduates from schools or universities have hardly heard about standards and conformance in their classes; they rarely recognize its importance or impacts of standardization in real world; and unfortunately in their jobs they are not 'ready to work' when they should develop technical standards, business strategy, and trade/regulatory policy related to standards and conformance.

Education provides groundings for intellectual and professional life in a society and we put forward that standards and conformance be incorporated into education - making students 'be ready to work'. The objective of this guideline is to provide a handbook to support you in developing policy and in planning or implementing education programs about standards and conformance. This guideline is first kind of manual in the standards education by providing comprehensive factual and analytical information with case studies about past/current standards education programs worldwide and by presenting a strategic model curriculum.



<Figure 1> why do we care about education?

In terms of APEC SCSC, we started discussion about education in 2005; and the SCSC agreed to take actions to promote the education activities in the region and to initiate a project for case studies and curricula development for member economies in 2006. Here are some historical highlights of the discussions and agreements and why APEC develops this education guideline:

- In September 2005, at the APEC SCSC II meeting, the APEC member economies recognized the importance of recognized the importance of 'standards education' as a way to build national standards infrastructure and to narrow the gap in standards infrastructure among APEC economies. The SCSC agreed to continue to share information and experience on standards education in its future meetings.

- In February 2006, at the APEC SCSC I meeting, the SCSC agreed to take actions, to promote the inclusion of Standards and Conformity Assessment and related activities in the curricula of schools and universities in the APEC region. Where relevant, this would be done in conjunction with relevant APEC forums with responsibility for educational matters. The SCSC endorsed the funding proposal in principle and asked Korea to develop the project proposal taking account of the comments from member economies.

- In November 2006, APEC Ministers instructed the importance of standards education: "*the APEC Ministers recognized the importance of standards education and encouraged members to develop reference curricula and materials to address the significance of standards and conformance to trade facilitation in the region"* at the eighteenth APEC Ministerial Meeting.

- In November 2006, noting the Ministerial instruction, APEC SCSC reviewed its Terms of References and agreed to include 'promoting standards education activities to address the significance of standards and conformance in the region' as one of its long term objectives.

APEC SCSC has recognized that the formal education on standards and conformance is at its beginning stage and that guideline for the education policy and program is useful handbook for all member economies, particularly for developing economies.

However, this guideline do not attempt to provide a perfect model suitable for all economies whose conditions are diverse, but this guideline endeavors to provide realistic and investigative systematic information and to advise desirable framework and components, primarily focusing on formal education but not limited to, you could selectively use or refer to.

2. Methodology and Definitions

2.1. Methodology of Survey and Research

A combination of survey and research has been done to conduct case studies for standards education, by project editor of Korean Standards Association (KSA). The editor collected survey inputs from sixteen APEC SCSC member economies and other additional inputs from selected experts and institutions. The original survey template is attached as Annex A and key components of the survey are summarized in <Table 1>. Additionally, after completion of the survey, a research has been done to make the case studies complementary and comprehensive.

You should note that, to get appropriate information within limited time and resources, the survey and research do not collect industry/sector specific programs already well going (e.g. ISO 9000/14000 training programs), but gather information about the education programs on standards and conformance in general.

< Table 1 > Survey/Research Questionnaire

Classification	Questions	Detailed Items
Part I. National Strategy and Priority	1.1 National Strategy	1.1.1 Having strategy in general? 1.1.2 Having education strategy? 1.1.3 If having education strategy - Increase public awareness? - Facilitate professional education? - Facilitate formal education? - Build networking among stakeholders? - Develop web based database? 1.1.4 Contact points for education in general? 1.1.5 Plan to include education in strategy?
	1.2 National Strategy Committee	1.2.1 Having standardization committee? 1.2.2 Having standardization education committee? Work scope, objectives? 1.2.3 Contact points for the education committee?
	1.3 National Priority	Priority: Not Specified, Medium, High Activity: None, Plan, Developing,
Part II Experiences and Lessons Learned	2.1 List of Experiences	Completed or In-Operation in 2006~2007 - Operator, website, Title (program/project), Type(target groups), Note
	2.2 Fact Sheets of Experiences	Detailed information about the list of experiences - Title, weblink, Operator, Type(target groups), Learning objectives, Number of participants, Operation Summary, Textbook
	2.2A Lessons Learned	Lessons learned in planning or deploying education programs/projects - Title , Date, Context, Lessons, Source, Contact
	2.3 Important Literature	Relevant literature about standardization strategies, value, case studies, or textbook

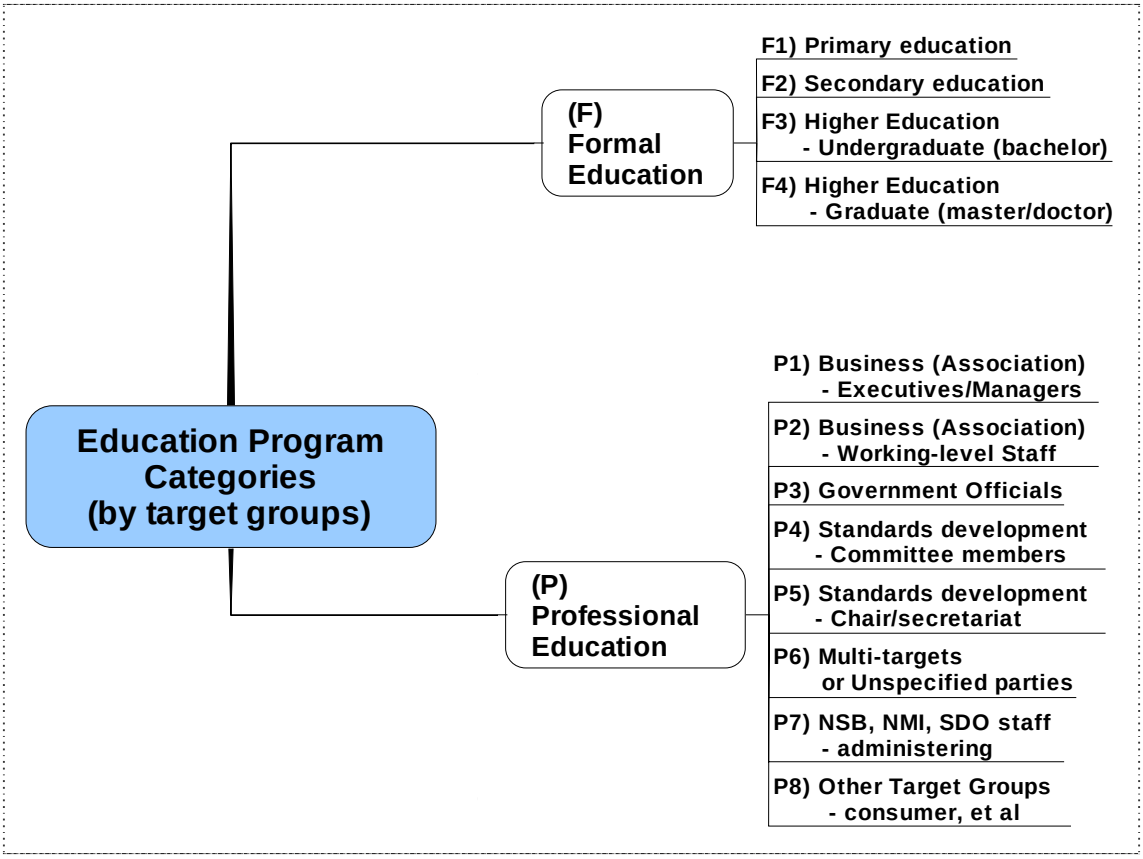
2.2. Categorization to Formal and Professional Education

For efficient case studies, we categorized the education programs by its target groups as describe in <Figure 2>. The two big categories are formal education (F) and professional education (P).

The formal education (F) is classified into four sub-categories: primary education (F1), secondary education (F2), higher education – undergraduate (bachelor) (F3), higher education – graduate (master/doctor) (F4).

The professional education(P), non-formal education or training, is classified into eight sub-categories: for Business (Association) Executives/Managers (P1), Business (Association) Working-level Staff (P2), Government Officials (P3), Standards development – Committee members (P4), Standards development – Committee chair/secretariat (P5), Multi-targets or Unspecified parties (P6), ISO NSB/NMI/SDO staff (P7), and Other Target Groups (P8).

Please note that the twelve abbreviated codes of (F1) ~ (F4) and (P1) ~ (P8) are broadly used in the most chapters of this guideline including the annexes.



<Figure 2> Classification of education programs

2.3. Terms

Formal education	Traditional or standardized education in schools or institutions for primary education, secondary education, and higher (tertiary) education.
Primary education	Primary education is the first stage of compulsory education. It is preceded by pre-school or nursery education and is followed by secondary education.
Secondary education	Secondary education is the stage of education following primary school. Secondary education is generally the final stage of compulsory education.
Higher education (tertiary education)	Higher or tertiary education is education provided by universities, vocational universities, community colleges, liberal arts colleges, technical colleges, and other collegial institutions that award academic degrees, such as career colleges. Higher education is normally taken to include undergraduate and (post)graduate education, while vocational education and training beyond secondary education is known as further education.
Undergraduate education	Undergraduate education is post-secondary education up to the level of a bachelor's degree.

(Post)Graduate education	(Post)Graduate education involves studying for degrees or other qualifications for which a first or Bachelor's degree is required, and the education for master’s degree or doctorate in graduate school.
Professional education	In this guideline, professional education is non-formal education or training. Professional education is a response to society's demands for expert help provided by competent people.

2.4. Acronyms

A2LA	American Association for Laboratory Accreditation-
ADT	Advance Data Technology. LTD (Chinese Taipei)
ANSI	American National Standards Institute (USA)
APEC	Asia Pacific Economic Cooperation
APEC CTI	APEC Committee on Trade and Investment
APEC SCSC	APEC CTI Sub-Committee on Standards and Conformance
APEC SCSC PAGE	APEC CTI SCSC Project Advisory Group on Education
ASEM	Asia Europe Meeting
ASEM SCA	ASEM Standards and Conformity Assessment
ASTM	American Society for Testing and Materials
BSI	British Standards Institution (UK)
BSMI	Bureau of Standards, Metrology and Inspection (Chinese Taipei)
BSN	National Standardization Body (Indonesia)
CEN	European Committee for Standardization (Europe)
CJLU	China Jiliang University (China)
COPRAS	CO-operation Platform for Research And Standards (CEN)
CSA	Canadian Standards Association (Canada)
CPRU	Construction Planning and Research Unit (Brunei Darussalam)
DSM	Department of Standards Malaysia (Malaysia)
DTI	Department of Trade and industry (Philippines)
DTI BPS	Bureau of Product Standards (Philippines)
EURAS	European Academy for Standardization
HKSARG	Hong Kong Special Administrative Region (Hong Kong)
ICES	International Committee(Community) for Education about Standardization
IEC	International Electro-technical Commission
IFAN	International Federation of Standards Users

ISO	International Organizations for Standardization
ISO CS	ISO Central Secretariat
ISO DEVCO	ISO Committee on Developing Country Matters
ITC	Innovation and Technology Commission (Hong Kong)
ITU	International Telecommunication Union
JSA	Japanese Standards Association (Japan)
KATS	Korean Agency for Technology and Standards (Korea)
KSA	Korean Standards Association (Korea)
METI	Ministry of Economy, Trade and Industry (Japan)
MOT/MOI	Management of Technology/Innovation (in graduate education)
NCC	National Communications Commission (Chinese Taipei)
NII	National Information Infrastructure Enterprise Promotion Association (Chinese Taipei)
NMI	National Measurement/Metrology Institutes
NSB	National Standards Body (usually corresponding to ISO, IEC)
PSIB	Product Standards Information Bureau (Hong Kong)
SAC	Standardization Administration of the People's Republic of China (China)
SCC	Standards Council of Canada (China)
SDO	Standards Developing/Development Organizations
SES	Standards Engineering Society (based on USA)
SPRING	Standards, Productivity and Innovation Board (Singapore)
STAMEQ	Directorate for Standards and Quality (Vietnam)
TAF	Taiwan Accreditation Foundation (Chinese Taipei)
TISI	Thai Industrial Standards Institute (Thailand)
TSE	Turkish Standards Institution (Turkey)
TTA	Telecommunications Technology Association (Korea)
UEPS	University Education Program on Standards (Korea)
UL	Underwriters Laboratories Inc. (USA)
UNECE	United Economic Commission for Europe (UNECE)
UNCEC WP6	UNECE Working Party on Regulatory Cooperation and Standardization Policies

2.5. Structure of This Guideline

This chapter provides a quick structural overview of this guideline from chapter 3 to chapter 7. These chapters include findings from the case studies about strategy and priority (ch3), education programs or projects (ch.4), and consolidated lessons learned (ch.5), strategic curriculum model (ch.6), and summary conclusions (ch.7)

Chapter 3 (with Annex B) provides strategy and priority related information. It provides full/summary text of national strategy, surveyed priorities, and committee information which are based on survey responses from sixteen APEC economies. Its subchapter consists as follows:

- Chapter 3.1, 3.2: Fifteen strategies (full/summary text) and analysis
- Chapter 3.3: Surveyed Priorities to different types of education
- Chapter 3.4: Seven examples of committees in standards education

Chapter 4 (with Annex C and D) provides practices of education programs or projects world wide. It contains 118 lists of practices (cases) and 88 detailed information (fact sheets) as well as its analytical findings. Also, model curriculum is proposed for each target group. Some key figures are summarized below in <Table 2>.

< Table 2 > Number of Education Practices

Category	Survey	Research	Total	Chapter
General Activities	1 cases 1 fact sheets	15 cases 7 fact sheets	**16 cases** **8 fact sheets**	chapter 4.1
Formal Education F1) Primary F2) Secondary	6 cases 5 fact sheets	4 cases 4 fact sheets	**10 cases** **9 fact sheets**	chapter 4.2
Formal Education F3) Undergraduate F4) Graduate	19 cases 11 fact sheets	8 cases 8 fact sheets	**27 cases** **19 fact sheets**	chapter 4.3
Professional Education P1) through P8)	32 cases 19 fact sheets	33 cases 33 fact sheets	**65 cases** **52 fact sheets**	chapter 4.4

Chapter 5 (with Annex E) provides nineteen original lessons learned mostly from survey. The surveyed lessons are analyzed and regrouped by the editor for more comprehensive understanding.

Annex F lists up contact points from the survey. The contact information will be useful when policy makers want to have further information about specific economy or specific programs in this guideline.

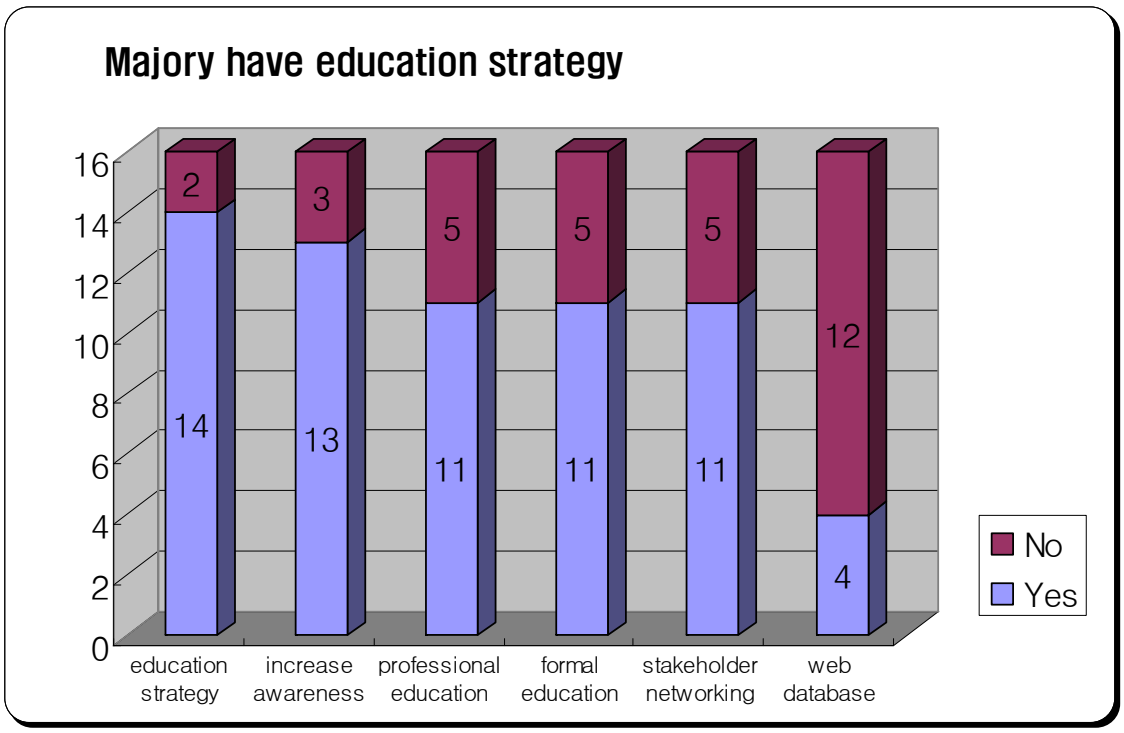
Chapter 6, the climax of this guideline, presents a strategic curriculum model – why, what and how for standards education.

Chapter 7 provides an executive summary in policy development, education program planning and implementation in the form of recommendations.

3. Case Study of Policy and Strategy

3.1. Majority of members have standards education strategy

When starting any work, the first things to do will be setting up strategy or direction. This chapter is providing you with an overview of national strategies about standards education based on sixteen responses from APEC economies. According the responses, the majority of national strategies include the importance of education activities. (No: Australia and Brunei Darussalam)



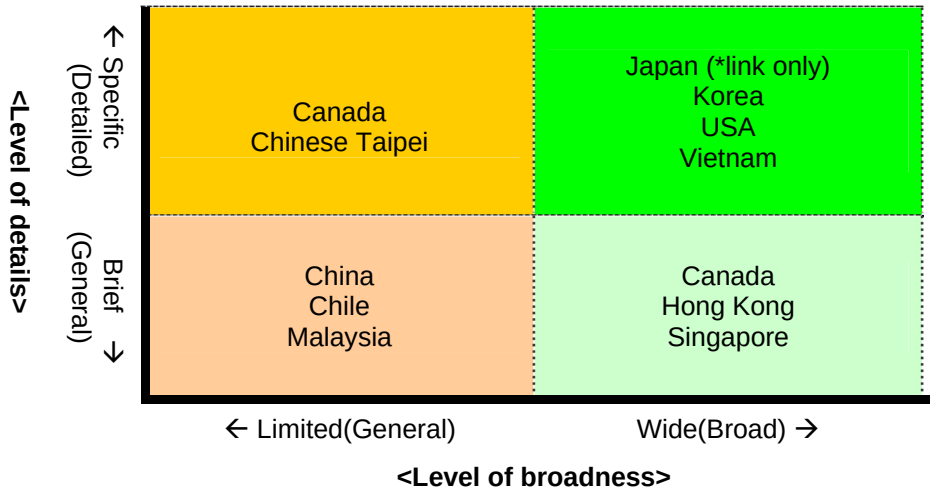
<Figure 3> Majority of members have standards education strategy

- Thirteen economies have a strategy encouraging to increase public awareness on the value of standards and conformance (in general) (No: Australia, Brunei, China)
- Eleven economies have a strategy encouraging to develop and implement education programs for policy makers, businesses, et al on standards and conformance (professional education) (No: Australia, Brunei, Canada, China, Chile)
- Eleven economies have a strategy promoting to embed the value of standards and conformance in curriculum of schools/universities (formal education) (No: Australia, Brunei, China, Chile, Malaysia)
- Eleven economies have a strategy promoting to build/enhance communication network for standards and conformance matters among academia, business, et al (networking) (No: Australia, Brunei, China, Japan, Vietnam)
- Four economies have a strategy boosting to develop database to facilitate relevant activities such as lectures, education providers, et al (database) (Yes: Philippines, Chinese Taipei, Korea, USA)

3.2. More in-depth and wide-ranging strategies to be considered

Being able to go into details of the strategies, twelve economies provided full or summary text of the education strategy attached as Annex B. (Twelve economies: Canada, Chile, China, Hong Kong, Japan, Korea, Malaysia, Singapore, Chinese Taipei, Thailand, USA, Vietnam; Also, the strategies of UK, APEC SCSC and UNECE WP6 are included for reference). Based on the text provided, further comparison analysis has been done by two viewpoints as below and the results are summarized in <Figure 4>.

- Level of details: Does the policy/strategy specify detailed action items?
- Level of wideness: Does the policy/strategy include wide range of education from professional education to formal education?



<Figure 4> Different Levels of Strategy

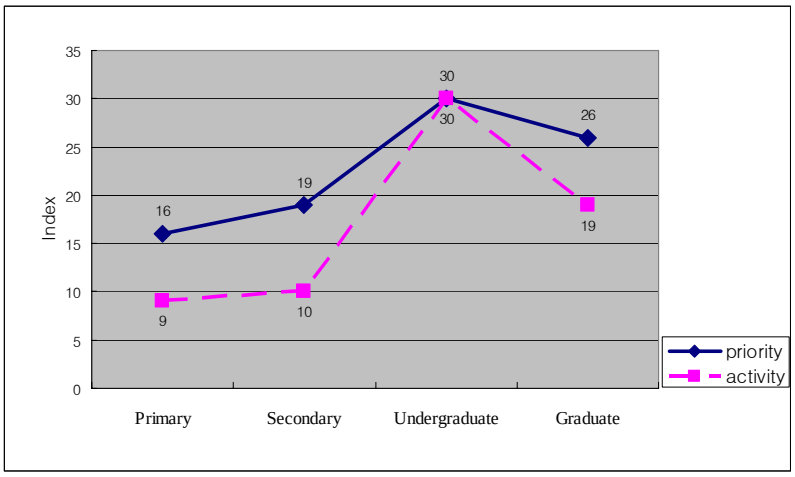
Good policy does not gurantee good implementation of education program, but will be able to increase the possibility of success. The strategies of Japan, USA, Vietnam and Korea show relatively in-depth and broad range of policy and deserve to be considered good practices when policy makers develop national strategies for standards education. Some sentences were excerpted from the strategies of the three economies.

→ **Selected Text from Education Strategy** ←
Establish department of standardization in universities in order to build education infrastructure. ***- Annex B.6 (Korea)***
Encourage universities and colleges within the United States to create standardization education programs in fields of study such as engineering, science, technology, government and public policy, business, economics and law. ***- Annex B.12 (USA)***
Set up and implement appropriate education/training programmes on standards and conformance in academic and professional institutions such as: universities, colleges, vocational/technical schools, etc ***- Annex B.13 (Vietnam)***

3.3. APEC Economies' priority to Undergraduate Education

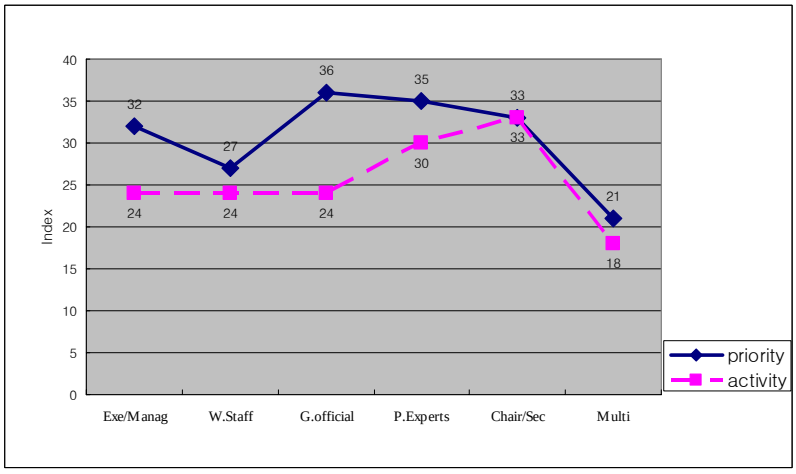
A strategic decision, after developing strategy, will be setting up priority – what to do first.

In formal education, the survey results from sixteen economies show that APEC economies give priority to undergraduate education followed by graduate education, secondary education and primary education. As shown in <Figure 5>, the order of priority order is well balanced with that of current activity. The cases of undergraduate (F3) or graduate (F4) are in Annex.D9 to D28. (The number in index in the <Figure 5> and <Figure 6> are the sum of the transformed numbers from the inputs: High-medium-low's in priority are transformed to 3-2-1 and operating–developing-planning-none are to 3/2/1/0 to understand and compare easily.)



<Figure 5> Priority and Activity in Formal Education

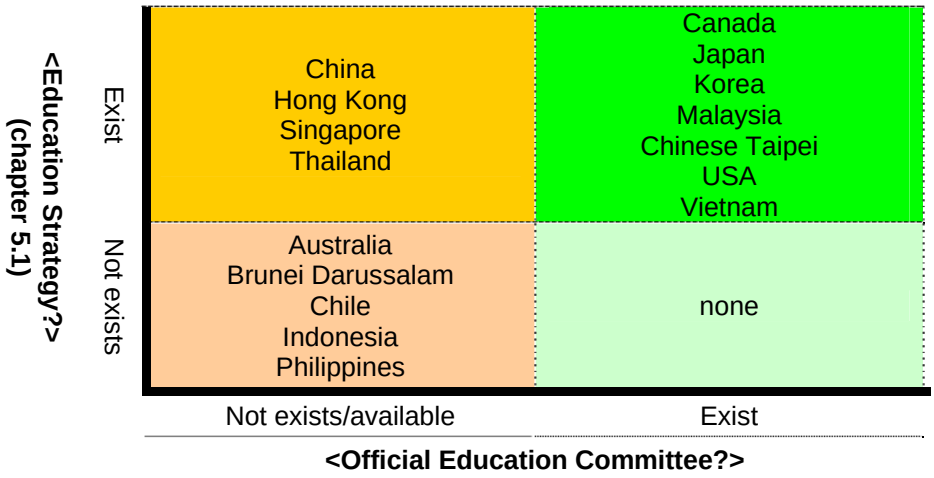
In professional education, the survey results show that APEC economies give priority to government officials followed by participating experts in standardization, chair/secretariat of relevant committees, biz executives/managers, and biz working level staff. However, the activities surveyed do not well match with the priority in <Figure 6>, and this data needs to be improved in future study. What we could raise herewith is that high the priority to the education for government official is, but low activity is. Please take a look at the cases in Annex.D31, D47, and D78, when you consider education programs for government officials (P3).



<Figure 6> Priority and Activity in Professional Education

3.4. Education Committee Will be Useful

It is common for the people in standardization arena to organize a committee to deal with a new issue. Seven economies responded they have an official committee as shown in <Figure 7>; all of them have been reported to have official education strategy in an earlier chapter These committees are mainly to support and implement relevant education strategies



<Figure 7> Do we need an Education Committee?

All the seven economies provided both the objectives and contact information of those committees as well. The contact information is included in Annex F, and the sentences excerpted from the objectives of the education objectives are displayed below.

→ Selected Objectives of Education Committee ←
The purpose of the committee is to introduce the basics of standards and the process of standardization to university students. - ***CSA Committee on Standards and Education(Canada) -***
To embark on activities to enhance awareness and promote the importance of those standards among consumers; and to ensure that consumers are given adequate and timely information, knowledge and awareness on standards ***- Malaysian Association of Standard Users (Malaysia) -***
Advising KSA in developing strategy for and in implementing the university edustandardization program on standards (UEPS). ***- KSA committee for University Education Promotion on Standardization (Korea) -***
Support the implementation of Goal 10 of the current United States Standards Strategy to "Establish standards education as a high priority within the United States private, public and academic sectors." ***- ANSI Committee on Education (USA) -***
Development of training programmes; Organization of preparation of curricula, teaching materials and references; Implementation of training courses; Training of trainers; International cooperation in the field of MSTQ Training/Education ***- STAMEQ training center (Vietnam) -***

4. Case Study of Education Practices

Subsequent to arranging policy issues of strategy, priority or committee, it will be the time to sketch and realize education programs. This Chapter 4 is exploring the education practices in order of general activities by primary/secondary education, higher education, and finally professional education, and some general education activities by international organizations

4.1. General Activities Mainly by International Organizations

This chapter shows that international organizations have been more and more paying attention to higher education, and trying to reach out universities and academia. It is worthwhile to recognize that ICES, the first international forum on standardization education is now discussing formalization. Some of them are summarized below, and detailed information can be found in Annex C. #104 to #118 or Annex D81 to D88.

- ✓ ISO award for Higher Education in Standardization (2007) - SO created this award to encourage and recognize successful programs in higher education on standardization. ***– ISO (Annex C#114)***

- ✓ IEC Lecture Series I(2005) and II (2007) ***– IEC (Annex C#114, #115)***

- ✓ IEC Challenge – 'International Standardization as a Strategic Tool', comprising the commended papers from the IEC Centenary Challenge. ***– IEC (Annex C#112)***

- ✓ Cooperation between ITU-T and Universities - Regular Consultation Meetings and online Information Exchange ***– IEC (Annex C#112)***

- ✓ IFAN WG16 Education and training - To support and promote initiatives in education and training in the standardisation field at international, regional and national levels ***– IFAN (Annex C#113)***

- ✓ COPRAS website is providing education-like information about ICT standards-making to European Union-supported research projects ***- CEN, W3C, et al(Annex C#106)***

- ✓ APEC Strategic Standards and Conformance Education Project – Phase I – Case Studies and Curricula Development, Phase II – Textbook Development ***- APEC (Annex C#103, #104)***

- ✓ UNECE Recommendation "I" Methodological studies and education ***- UNECE WP6 (Annex C#103, #104)***

- ✓ Standards Engineering Society (SES) has established a certification program to recognize persons who have demonstrated a high degree of professional competence in different areas of standards. ***- SES (Annex C#117)***

- ✓ EURAS wants to help change this situation and supports the development of standardization curricula by providing a platform and opportunities for the discussion, development and exchange of teaching material. ***- EURAS (Annex C#107)***

- ✓ International Committee for Education about Standardization - The first international forum about standardization education. *Formalization is under discussion in 2008. ***- ICES (Annex C#108)***

4.2. Primary/Secondary Education

Starting from the cases of educating children; we identified ten cases from six economies – Japan, Korea, Philippines, Thailand, Turkey and UK as listed in <Table 3>. The METI (Japan)'s case is unique in the way of providing a short special lecture program for schools 'on demand'. Per request, they do provide lecture of 100 minutes or less about importance of standards in daily life and in society. In 2006, 1,351 students from 25 schools took the class.

In Korea, there are two different activities are ongoing. The 'Standards Olympiad' of KSA is a two day camping program consisting of lectures and group contest activities, participated by 300(100 groups) children in 2007. Also, a sub-chapter for secondary school textbook is under development; the chapter will be taught in class from 2010 nation-widely.

In Philippines, BPS in DTI operates a campaign called '*Standards Blitz*' and introduced a few programs in primary/secondary education. They have developed four modules/products for mobile learner, and also seven lesson plans on four products to teach students. In total, around 1,000 teachers, industry experts, and students were educated. The BPS organized a 'Standards Essay Writing Contest' to celebrate World Standards Day in 2006.

In Thailand, TISI had successfully completed an outstanding nationwide education project '*Integrating Standardization in Education*' from 2003 to 2006. The project focused on training of teachers, and operated several types of contests. In total, there were 2,354 teachers from 2,202 schools trained and 444,600 students participated by the triumphant project.

In Turkey, almost 15 year ago TSE initiated and then Ministry of Education took over an education project primarily given to high school students. This has been a part of the Turkish education system by now as a part of current official curriculum.

In UK, BSI provides various modules for primary and secondary school class via website. BSI promoted the website to all primary and secondary schools in the UK. The website recorded around 45,000 page hits per month in average in 2006.

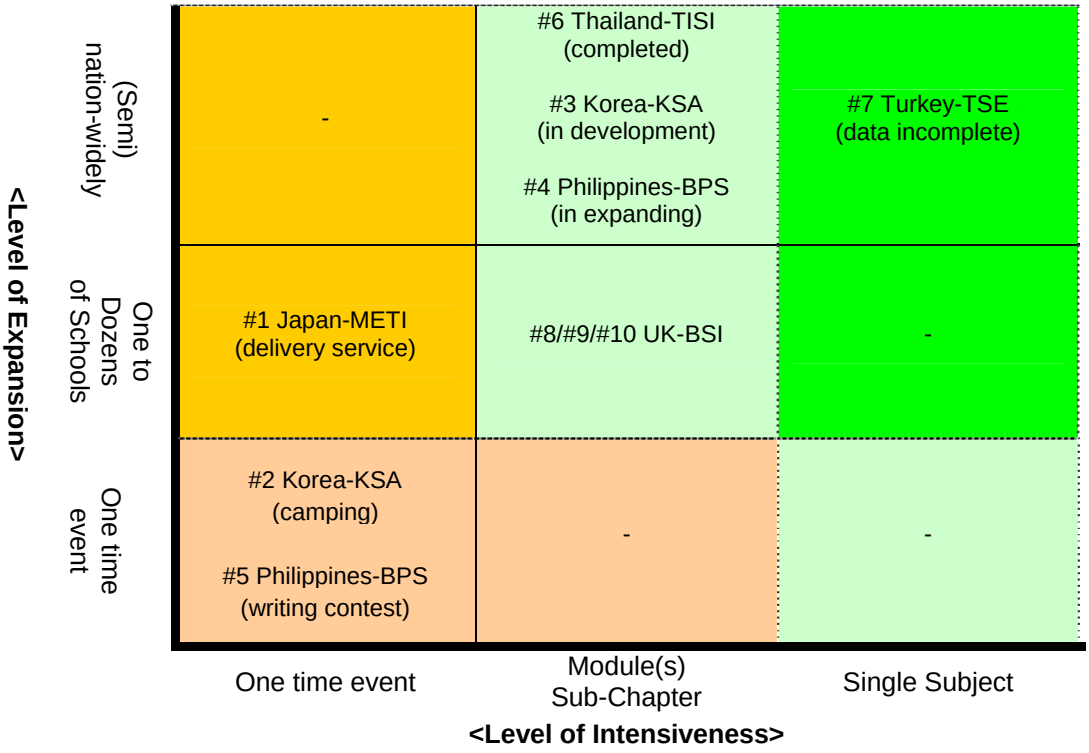
< Table 3 > Cases in/for Primary and Secondary Education

#No	Target	Economy Org.	Operator	Title	Method F.Sheet
1	F1) F2)	Japan	METI	Standards Education Delivery Service (Lectures on Demand)	Survey Annex D1
2	F1) F2)	Korea	KSA	Standards Olympiad	Survey Annex D2
3	F2)	Korea	KSA	Textbook Sub-chapter Development for Secondary School Students	Survey
4	F2)	Philippines	BPS	Standards Blitz – Standards in the Curricula of Secondary and Alternative Learning Education	Survey Annex D3
5	F2)	Philippines	BPS	Standards Blitz – Standards' Essay Writing Contest (including Teacher)	Survey Annex D4
6	F2)	Thailand	TISI	The Project on Integrating Standardization in Education (including teachers)	Survey Annex D5
7	F2)	Turkey	TSE	Standardization and Quality	Research Annex D6
8	F1)	UK	BSI	BSI's Education Programme Primary (Age 7-11) Online Information	Research Annex D7
9	F2)	UK	BSI	BSI's Education Programme Secondary (Age 11-14) Online Information	Research Annex D8
10	F2)	UK	BSI	BSI's Education Programme Secondary (Age 14-19) Online Information	Research Annex D9

<Comparison Analysis of Primary/Secondary Education Practices>

To identify implications of the experiences in primary/secondary education, we categorized the ten cases by two viewpoints and the results are summarized in <Figure 8>.

- Level of intensiveness: How intensive? One time event or modules for a subject?
- Level of expansion: How many schools? One school or nationwide?



<Figure 8> Analysis of Primary/Secondary Education Cases

Exceptional is Turkey (#7) as they developed a textbook for a single subject. Verification about detailed operation is needed as the information in gained in phone conversation.

Outstanding is Thailand (#6) as they operated nationwide program for four years, and around half a million secondary school students participated in the program. Its detailed operation methods and various types of contests are good practices for all. This program is considered as best practice of leadership and cooperation between standards institution and education ministry. For details, please see Annex D5.

Like the cases of Korea (#3) and Philippines (#4), developing modules or a chapter is a good realistic strategy if the output becomes part of formal curriculum of primary or secondary schools.

Easy and smart approach is organizing an event to involve many students in a contest (#5) or a mixture of contest plus lectures (#2). In short term, the education on demand service (#1) seems to be a creative niche approach for not only primary/secondary education but also other types of education.

Some photos are enclosed in <Figure 9> from the primary/secondary education practices.

<Integrating Standardization into Livings> TISI, Thailand

<Standardization and Quality – Textbooks> TSE, Turkey

< Standards Olympiad> KSA, Korea

<Figure 9> Selected images from Primary/Secondary Education Cases

4.3. Higher Education

As the children grow up, many of them choose to be students in university. Totally 27 practices were identified, excluding courses related to specific sector standards like IT-related standards, and 17 out of 27 practices have enough information to be analyzed as listed in <Table 4>. Unlike the education programs in primary/secondary education all operated by government or standards institutions such as METI or TISI, the operators of higher education practices are mixed including government, standards related institutions, consulting company and universities.

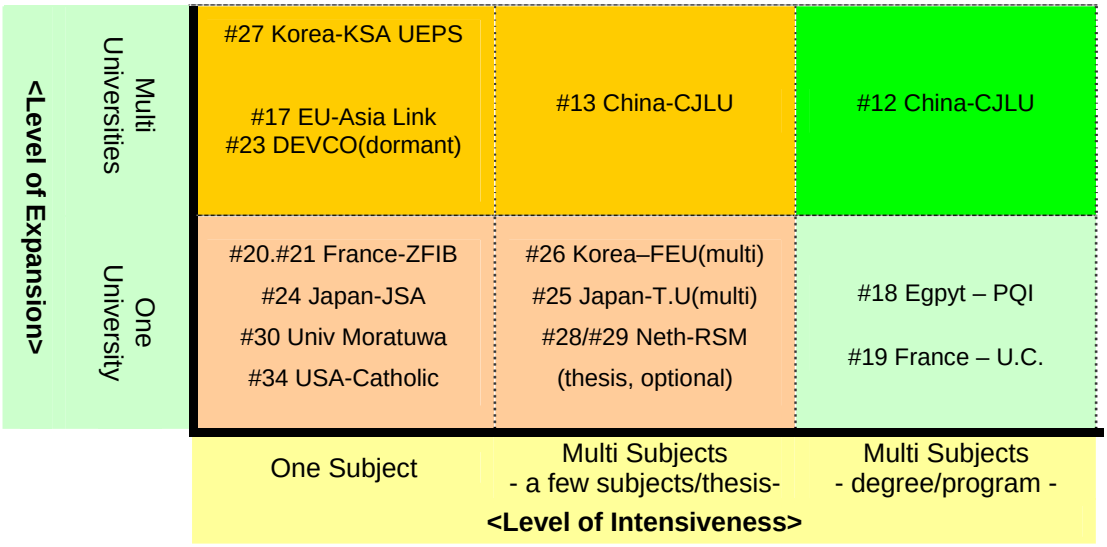
< Table 4 > Selected Seventeen Cases in/for Higher Education

# No	Target	Economy Org.	Operator	Title	Method F.Sheet
12	F3)	China	CJLU	CJLU-SQM program for bachelor's degree	Research AnnexD10
13	F4)	China	CJLU	CJLU MEE and TTMM course for Master's degree	Research AnnexD11
17	F4)	EC(EU)	Helmut Schmidt-Univ, et al	EU-Asia Link -Standardization in companies and markets	Research AnnexD12
18	F4)	Egypt	PQI	PQI's programmes for post graduate degrees (PQI's programme)	Research AnnexD13
19	F4)	France	Univ of Techn of Compiegne	Master's degree in quality management (MQ) Master's Programme NQCE(Normalization, qualite, certification et essays)	Research AnnexD14
20	F4)	France	ZFIB	Standardization as a tool for Competitive Intelligence	Survey AnnexD15
21	F4)	France	ZFIB	Standardization as a tool for Openness	Survey AnnexD16
22	F3)	Indonesia	BSN	Development of curriculum for education on standardization	Survey
23	F3) F4)	ISO	ISO DEVCO	Development Manual 4 - Teaching of standardization on institutions of higher learning	Research AnnexD17
24	F4)	Japan	JSA	Standardization for business solution	Survey AnnexD18
25	F4)	Japan	Tokyo Univ	Graduate school of Technology Management (MOT)	Research AnnexD19
26	F3)	Korea	KSA	KSA-Far East University Standardization Program "Global Standards Strategy" (for Computer Engineering Students)	Survey AnnexD20
27	F3)	Korea	KSA	University Education Program on Standardization(UEPS)	Survey AnnexD21
28	F3)	Netherlands	RSM Erasmus U	Business Administration - Standardization Strategy	Survey AnnexD22
29	F4)	Netherlands	RSM Erasmus U	Standardization Management, et al	Survey AnnexD23
30	F4)	Sri Lanka	Univ of Moratuwa	MBA in Management of Technology / Quality Management & Standardization	Survey AnnexD24
34	F4)	USA	Catholic University	School of Engineering - Engineering Management Program	S+Research AnnexD26

<Comparison Analysis of Higher Education Practices>

In order to identify implications and find good practices, we have attempted to categorize the seventeen cases by the following two viewpoints as displayed in <Figure 10>.

- Level of intensiveness: How intensive? Does it provide single subject or three different subjects related to standardization?
- Level of expansion: How many universities are using same textbook, modules or curriculum? Is it transferable to other institutions?



<Figure 10> Analysis of Selected Seventeen Cases in/for Higher Education

First, let us look at the three most concentrated programs which are operating single degree or program for standardization; these are located in the most right column in <Figure 10>.

Most intensive and impressive case is CJLU (China Jiliang University, #12). Its undergraduate course SQM (Standardization and Quality Management) providing seven different courses and two additional special courses. The SQM course is for bachelor degree and requires four years to graduate. In total, 592 students graduated in 2003-2006 and surprisingly more than 90% of them are working in the field of standardization; it is probably possible because China is huge economy whose local authorities need a lot of employees comparing to other normal economies. It is reported that some universities in China are using publications and modules developed by CJLU.

Other two intensive courses are PQI's program for post graduate degrees in Egypt (#18), and University of Technology Compiegne's courses in France (#19). The two courses are covering variety of standardization, quality management, certification and metrology.

Secondly, let's move to the cases providing students with two or more subjects related to standardization; these are located in the center column of <Figure 11>.

The graduate courses of CJLU, MEE (Mechanical and Electronic Engineering disciplines) and TTMM (Testing Technology and Measuring Meters disciplines), which are relatively less intensive than its undergraduate course SQM, provides three subjects; the MEE and TTMM requires 2.5 years to graduate and the number of students from MEE and TTMM are about thirty every year.

Stimulating cases are MOT (Management of Technology) and MBA (Management of Business Administration) for graduate students. These interesting cases are MOT in Tokyo University (#25) and MOT/MBA in RSM Erasmus University (#30). Tokyo University provides a MOT program, '*strategic management of industrial standardization and intellectual property*' at Professional Graduate School of Technology; the MOT program provides multiple subjects from standardization policy and strategy to specific technology standards or case study as described. RSM Erasmus University has '*Standardization Management*' course in Department of Management of Technology and Innovation; the Erasmus course encourages students to write their master thesis to standardization and the thesis list is found in Annex D23.

Thirdly, let's jump down to the cases providing students with single subject - usually two or three credits for one semester. These are located in the left column of <Figure 11>.

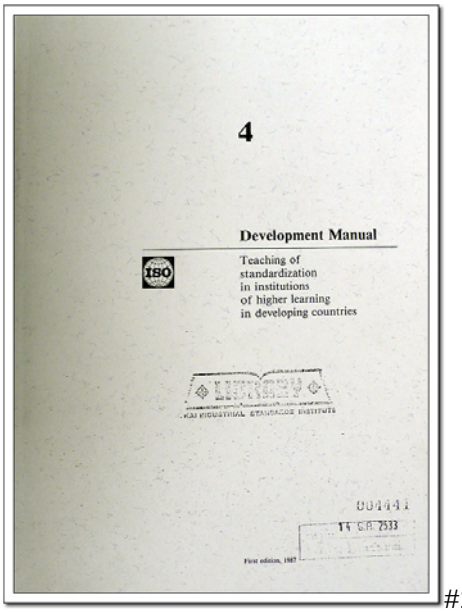
A smashing success is Korea's UEPS (University Education Promotion on Standardization, #27) in standpoint of its semi-nationwide outreach. The UEPS is characterized by common textbook, team-teaching arrangement, database and wide participation from various types of students. The program operator KSA provides a common textbook '*Future Society and Standards*' to all the students of partner universities for free. Also, KSA assists universities to prepare syllabus and to arrange external speakers; most classes are lectured by the outside invited speakers from businesses, standards organizations or research institutions. Each semester, KSA circulates to both teachers and students to collect feedback about the program. There were 6,681 students in 46 universities participated in the program in 2006. The spectrum of students are broad; freshman to senior; engineering to management major, choosing as elective to as required for specific major.

Two different types of cases are EU (#17) and ISO DEVCO (#23) – not programs but project/textbook. The EC funded project '*EU-Asia Link – Standardization and Markets*' is an eye-opener to the people when they first see the 718 pages of hardcover textbook. Dozens of standards originations and universities are involved to develop the textbook, e-learning modules, and pilot education program. The textbook is on sale, but the e-learning site is only open for its partners. The ISO DEVCO's deliverable '*Development Manual 4 - Teaching of standardization on institutions of higher learning*' was published in 1987 mainly for developing economies, but not being widely recognized or used now.

Other four courses in this category are Catholic University (#34), ZFIB course (#20, #21), JSA's MBA program (#24), and University of Moratuwa (#29). Catholic University provides a subject '*Strategic Standardization*' for graduate students in engineering; Catholic course requires student to prepare a research paper related to standardization which consists 90% of students' course achievement. ZFIB provides operate two types of courses – '*Standardization: a tool for Competitive Intelligence' and 'Standardization: a tool for Openness*' also for graduate students in engineering; assumably the firm ZFIB provides the course on demand by university. JSA's offers '*Standardization for business solution*' course for MBA student; JSA provides 18 hour short course with team-teaching method. Moratuwa offers '*Quality Management & Standardization*' in MBA in Management of Technology Program; the professor from Moratuwa suggests the course is suitable for Management of Technology and Information Technology.

Noteworthy enough is that six graduate courses (F4) - the cases of Tokyo Univ, RSM Erasmus, Catholic, ZFIB, JSA and Moratuwa – are targeting for similar spectrum of students in engineering, MOT or MBA, and the contents of those are more focusing on how standards function as strategic management tool. In principal, standardization is interrelated with technology, management, administration and its education is better accepted when to be discussed with academic theory and business practices together. With the interdisciplinary characteristics, at graduate level, standards education seems to be fitting well as part of MOT or MBA curriculum.

Some textbook images are enclosed in <Figure 11> from the higher education practices.



#1

#2

<Photos: from above, clockwise>

#1. ISO DEVCO (Annex C#23, D17)
#2. Korea – KSA UEPS (Annex. C#27, D21)
#3. China-CJLU (Annex C#12/13, D10/D11)
#4. Netherlands–RSM (Annex C#28/29, D22/23)
$5. EU-Asia Link (Annex C#17, D12)


#3

$5

#4

<Figure 11> Textbook Images from Higher Education Cases

4.4. Professional Education

Different from formal education, there have been various professional education programs by many national standards and conformance related institutions for decades to meet for the demand of society. That is basically why this guideline is primarily dealing with formal education which is at its beginning stage. However, we make an effort to analyze typical professional education practices as it is constructive to clarify what is common or different between formal and professional education.

After having reviewed various practices, we recognize that majority of the professional education programs are designed to build particular capacity or skills. The editor intentionally collected all the courses operated by ANSI, BSI and KSA to examine various range of skill-up programs at a glimpse. Based on the 65 practices in #38 to #102 of Annex C, we attempted to classify the activities or skills in professional education as follows in <Table 5>. You might note the fact that the topics of No.8 to 14 are general and could be the contents for any target groups while No.1 to No.7 are dealing with skills for the profession in special positions or tasks.

< Table 5 > Classification of Skills in Professional Education

No	Topics or Skills	Main Target Groups	Relevant practices
1	Conformance Skills – test, assessment, and documentation	NMI, laboratories Biz experts	#81
2	Administration of standardization activities	NSB, NMI, SDOs Committee chair/sec	#48, #49, #82, #85
3	Standards for technical regulations or legislation	Government officials NSB, NMI, SDOs	#38, #53, #67, #89, #100
4	Communication skills – chairing/moderating a meeting	Committee chair/secretariat	#78, #86, #99
5	Working across cultures – cultural differences	Committee chair, secretariat, members	#52, #76
6	Developing/Drafting standards – template	Committee members Biz experts	#45, #49, #53, #70, #79
7	Specific industry/technology standards or their aspects	Specific Industry experts	#54, #59, #77, #93, #97
8	Communication skills – language (English)	All Committee members	#52
9	Communication skills – consensus, negotiation, discussion	All Committee members	#52, #72
10	Standards Development Procedures	Committee members Biz experts	#39, #45, #74, #75, #79
11	Standardization Process, Practices in general	All Committee members	many including #40, #60, #101, #102
12	Structure of national standardization system	All Committee members	#41, #42, #65, #83, #88, #89, #91, #95
13	Structure of international standardization system	All Committee members	#42, #51, #80, #87
14	Basics, Fundamentals about standardization	All	(many including #39,#84, #90, #92, #94)

5. Case Study of Surveyed Lessons

5.1. Clear Objectives and Target Oriented Programs

A program going well with one group does not always go well with another group. The findings of case studies suggest that we should consider more carefully the objectives of education program when we design the curriculum: The program will not be same when the objective is to raise general awareness with to master a special skill to participation in a ISO meeting; The length or depth of a program will be different whether it is targeted for secondary school students or for MBA/MOT students.

- Target Groups:
  - Formal Education vs. Professional Education
  - Primary/Secondary vs. Undergraduate vs. Graduate
  - Engineering vs. Social Science (Higher Education)
  - Biz Executives vs. Engineers/Researchers vs. Gov. Officials vs. NSB staff
- Objectives and Program:
  - General Awareness vs. Special Expertise
  - Teach what to know vs. Teach what to do
  - One day vs. Two days Vs. A week; One semester vs. Two semesters
  - Elective vs. Required(Compulsive)

→ Lessons Learned ←

Understand Different needs by Target Groups. We should understand that the interest and attitude are different from target groups (Primary/Secondary vs. Univ vs. Biz vs. Gov). Accordingly, we should consider seriously the difference in planning and implementing education program about appropriate hours, level of details, objective, curriculum, textbook, teaching Methods.

- Annex.E.16 (APEC – SCSC PAGE recommendations - Lesson #2)

ULU has found through its experiences educating individuals overseas that transposing programs, content and teaching methods utilized in the United States in some international situations does not always yield the same positive results. Programs need to be tailored to the audiences involved, particularly with respect to cultural differences..

- Annex.E.16 (USA – UL University - Lesson #2)

The content of the subject needs to be changed in order to make it easier to understand and more useful in the Sri Lankan context.

- Annex.E.7 (Sri Lanka – University of Moratuwa)

When teachers lecture technical college students, they should take into account the students' special knowledge.

- Annex.E.1 (Japan – METI)

Have clear objectives. With unclear objectives, education program might go different ways. If the objectives are mixed with "exposing students to standard itself" and "train students for making specialists", the curriculum would be messed up as well as students get confused. Have clear objectives, then it would be much easier to make further plans..

- Annex.E.5 (Korea - KSA – UEPS Program – Lesson #2)

5.2. Make Teaching Materials Sexy

Probably it is not happy, but you will agree that at first glance 'standards and conformance' are not charming or attractive topics for most of the students. The question of 'how can we make it more attractive before and during the education classes' is fundamental and long term task to solve.

At this stage, it is general but natural that the initial target to make a course more attractive is to make textbook and relevant teaching materials interesting. There are some lessons learned from experiences from worldwide described below.

- Basic considerations to make it fun, sexy, interesting, or attractive
  - Simple, easy and colorful presentations
  - Images/posters/photos
  - Stories, exercises, experiments
  - Multimedia tools – audio or video clips, movies

→ Lessons Learned ←

Most difficult is to attract students. At first glance the topic seems to be dull. Once students get acquainted with standardization and understand its importance they become enthusiastic. I have no real solution yet to solve this problem.
- Annex.E.6 (Netherland – Erasmus University)

Definitions, concepts, examples, exercises, experiments, materials, stories, photographs, and images were used for the students to understand easily.
- Annex.E.2 (Philippines – BPS in DTI)

Students are MTV generation. They are accustomed to visualized education materials. Also, for teaching materials, visualized education materials such as case pictures, colorful PPT slides, and moving pictures are very effective.
- Annex.E.5 (Korea - KSA – UEPS Program – Lesson #4)

Choice of colours for presentation – not text heavy and legible. an improve sessions through posters, display tables, video presentations etc. during breaks.
- Annex.E.9 (Malaysia –Association of Standards Users – Methods, Materials)

Make textbook and teaching materials interesting. Do not teach what you know well (e.g. ISO process), but what the students could be interested/excited.
- Annex.E.16 (APEC – SCSC PAGE recommendations - Lesson #3)

The ICES 2007 Workshop participants expressed sympathy that the content itself and the presenting way of content be FUN and SEXY in any classes of education on standardization.
- Annex.E.19 (ICES – 2nd Workshop)

5.3. Preferred are 'Daily Life Examples or Case Studies'

It is revealed that one good way to make the program more attractive is providing examples in daily lives or working with case studies. Standards in daily lives and its significance could be used for all levels of target groups; while case studies will be used in mainly higher education or professional education as it normally requires theory-based analysis.

- Standards in daily life:
  - Example standards used in daily lives such as A4, MP3, Container, et al
  - Keep balance between practical examples and theoretical lecture
  - Provide trainer's own experience
- Case studies, and case studies:
  - Case studies proving the significance of standards, preferably in monetary value, in trade, regulations and businesses.

→ Lessons Learned ←

Participants found that they learnt most from practical exercises than from the theoretical presentations given and requested more practical exercises be given.
Using examples from the trainers own experience was received well by participants
- Annex.E.11 (Australia – Standards Australia Training – paragraph #1, #2)

When the course is theoretical it is not well received- the students want examples of the real life.
- Annex.E.4 (France – ZFIB)

Actual sample of commodities/products are effective to attract students.
- Annex.E.1 (Japan - METI)

Feature actual case studies of how companies have benefited from the use of standards; Feature benefits in terms of monetary value, such as cost savings, revenue etc.
- Annex.E.13 (Singapore – SPRING)

Some participants find very useful about 'standards in daily lives'
- Annex.E.9 (Malaysia –Association of Standards Users – from comments)

Business cases are essential, mainly when built and developed by the students
- Annex.E.4 (France – ZFIB)

Participants prefer to learn through 'Case studies' than mere theory only.
- Annex.E.7 (Sri Lanka – University of Moratuwa)

It is clear that 'CASE STUDIES' are one of the most useful and attractive tools to deal with standardization issues. A Good case study could be highlighted with various important aspects of standardization, such as economics, business management tool, patent, de jure vs. de facto, et al. One good example case discussed in the workshop was RAMBUS among others.
- Annex.E.19 (ICES – 2nd Workshop)

5.4. Exciting is 'Learning by Doing'

Learning by doing, or hands-on learning called by education experts, is to help students to acquire knowledge and skills outside of lectures, for example in group activities, role plays or simulation practices.

Hands-on learning needs relatively experienced teachers both in theory and field experiences. Skillful teacher will be able to ensure student understand unfamiliar concepts, processes or skills. The merit of learning-by-doing is that most students are enthusiastic in the process. It could be also used as a tool to assess students how much they understand what they learned in class:

- Learning by doing – Contest
- Learning by doing – Group activities:
  - Group brainstorming, discussion, debate
  - Group Problem-solving for standardization
  - Peer teaching
- Learning by doing – Simulations/role-playing:
  - Role playing: proponent, supporter, moderator, opponent
  - Simulating standardization meeting (chair, secretariat, delegates)

→ Lessons Learned ←

Participants in the training learnt a great deal from experiencing 'Standardization in action' for example attending committee meetings and participating in planning exercises etc.
- Annex.E.11 (Australia – Standards Australia Training)

A simulation tool to simulate the debates and have the consensus issue well understood should be a good idea.
- Annex.E.4 (France – ZFIB)

Quiz and group works are effective to attract students.
- Annex.E.1 (Japan - METI)

Students have found the teaching method (product/painting contests) fairly successful.
- Annex.E.3 (Thailand - TISI)

The session most participants find very useful are:
- Games, Slides and group activities

- Annex.E.9 (Malaysia –Association of Standards Users – from comments)

Also, a SIMULATION EXCERCISE is pointed out to be a cheerful mechanism. A memorable case is the program developed by ISO. ISO has developed an e-learning course which uses a teaching case, a simulation, for educating experts participating in ISO standards development process. The participants of this course takes play the role of national delegates of a imaginary country "Southistan" and simulates the standardization meeting. This kind of mock meeting of standardization, would also be useful for university students.
- Annex.E.19 (ICES – 2nd Workshop)

5.5. As is the Good Teacher, So Will the Students Be

As is the master, so will his men be. As is the good teacher, so will her/his students be.

Training of teacher (TOT) is a long-established dimension for successful education program. This is re-affirmed by lessons learned from practices in survey and research. Also, guest speaker or team teaching methods is suggested in some of the lessons. One reason is that standards and conformance issues are too broad to be covered by one teacher, and another reason is that invited speakers from businesses, governments or standards organizations could handle more examples or experiences which are attractive to students. However, possible disadvantage of invited speakers is lacking in teaching experience and that of team teaching is inconsistency or duplication in a class.

- Train teachers: Training about standards and conformance; about teaching skills
- Network teachers: To exchange information and experience among teachers
- Guest speakers/ Team teaching: Speakers from various sectors including businesses,

→ Lessons Learned ←

We realize that school teachers have vital roles to educate the importance of standardization to our youth so that they are able to apply what they have learnt to their occupation and their daily lives.
- Annex.E.3 (Thailand – TISI)

Teaching experiences and skills are not in proportion to knowledge. Some standards experts, even professors who are very well-known as standards experts don't have a good evaluation from students. Also teachers (professors) need to learn standards continuously because standardization covers a wide range of topics. Therefore, Korea provides teachers standardization course and workshops (seminars) regularly to teach the teachers and help them communicate each other.
- Annex.E.5 (Korea - KSA – UEPS Program – Lesson #6)

We should recognize the importance and necessity of training the teachers. We should facilitate networking of teachers with website or forum to exchange teaching materials, viewpoints and test methods
- Annex.E.16 (APEC – SCSC PAGE recommendations - Lesson #4)

TEAM TEACHING METHODS, particularly inviting business experts or executives as speaker, make courses more energetic and cheerful. However, a possible disadvantage of invited speakers tends to lack of teaching experience.
- Annex.E.19 (ICES – 2nd Workshop)

One person conducted most sessions and it would be useful to have a second person lead a few sessions. (It becomes very boring for the trainee when the same person is leading the sessions all the time, however it does provide consistency.)
- Annex.E11 (Australia – Standards Australia Training)

Students love field experts' lectures because they give students their experiences and know-how. So team-teaching methods that consist of standards experts from various fields make class more fun and energetic.
- Annex.E.5 (Korea – KSA – UEPS Program – Lesson #4)

5.6. Leadership and Collaboration needed

How and who start the education activity? The survey reveals that strong leadership by government or standards organization will be the answer to initiate nation-wide education activities. The <Table 6> shows selected good examples of leadership or collaboration by governments or standards organizations in Korea (KSA), Philippines (BPS), Thailand (TISI) and Turkey (TSE).

- Communication with education ministry: It is indispensable to cooperate with education ministry in deploying programs for primary/secondary education; government ministries are best-positioned to communicate with education ministry than any other private organizations.
- Funding/Sponsoring: Government or standards organizations are the first body who could allocate budget formal education about standards and conformance.

< Table 6 > Selected Practices in Leadership/Collaboration

No	Target groups	Economy Org.	Operator (website)	Title
4	F2) Secondary	Philippines	BPS	Standards Blitz – Standards in the Curricula of Secondary and Alternative Learning Education
6	F2) Secondary (including teachers)	Thailand	TISI	The Project on Integrating Standardization in Education
7	F2) Secondary	Turkey	TSE	Standardization and Quality
27	F3) Undergraduate	Korea	KSA	Korea's University Education Program on Standardization (UEPS)

→ Lessons Learned ←

Standards related organization like a case of Korea, is the best suitable for organizing such education program.
- Annex.E.5 (Korea - KSA – UEPS Program – Lesson #1)

Make consensus of education on standardization among industry, academia, government and standards related organizations. Like a case of Korea, from the very beginning, make consensus of education on standardization by getting financial support from government, by gathering participating universities and by obtaining participating lecturers from industries.
- Annex.E.5 (Korea - KSA – UEPS Program – Lesson #3)

The modules and lesson plans on standards that were prepared by the BPS in cooperation with the Department of Education were designed to be easy to read, situational and interactive.
- Annex.E.2 (Philippines – BPS in DTI)

5.7. Other Notable Lessons

We list some lessons are listed herein not because they are less important, but they are difficult to be labeled with others.

- Regular report about operation and regular contents update are necessary
- Best method in promotion is 'use the word of mouth' by participated students
- Easier access to selected standards could be an excellent teaching tool
- Use website as a databank and a forum among lectures and students
- Make the programs mandatory
- Give training certificate the those who stayed until the last session

→ Lessons Learned ←

Progress and problems should be reported regularly; Learning centres should be established to update the knowledge and information on standardization

- Annex.E.3. (Thailand – TISI)

What I would like to see done differently is easier access to selected standards so that students could actually visit sites and study standards that applied to any design(s) they were completing for assignments. So far, this has not been accomplished but I think it would be an excellent teaching tool and would introduce students at an early level to the importance of standards.

- Annex.E.8 (USA - Faulkner University)

In order to impress upon the participants that the sessions are very important and that they should complete the whole day session, certificate of attendance was only awarded to those who stay on till the last session of the training.

- Annex.E.9 (Malaysia – Association of Standards Users)

Use website as a databank and a forum where students and lecturers can exchange opinions. This can be not only a place where lecture materials can be uploaded and downloaded but also a space where lecturers share lecture materials and related materials as well as communicate with students and lecturers. Students love.

- Annex.E.5. (Korea – KSA – UEPS – Lesson #5)

Make the program mandatory. In Korea, some universities are running the program as a mandatory for engineering students or a ABEEK (Accreditation Board for Engineering Education of Korea) certified program.

- Annex.E.5. (Korea – KSA – UEPS – Lesson #7)

One of the best methods in promotion is to use the word of mouth among students. To give students who achieve more than a B+ grade a certificate is the one carrot approach.

The feedback from the students is a sound basis for analyzing and upgrading the program. Based on the results of the survey, curriculums and lecturers can be rearranged.

Even though the contents of the program are good, if students don't give a good evaluation, it would be easy to cancel the class.

- Annex.E.5. (Korea – KSA – UEPS – Lesson #8)

6. Strategic Curriculum Model for Standards Education

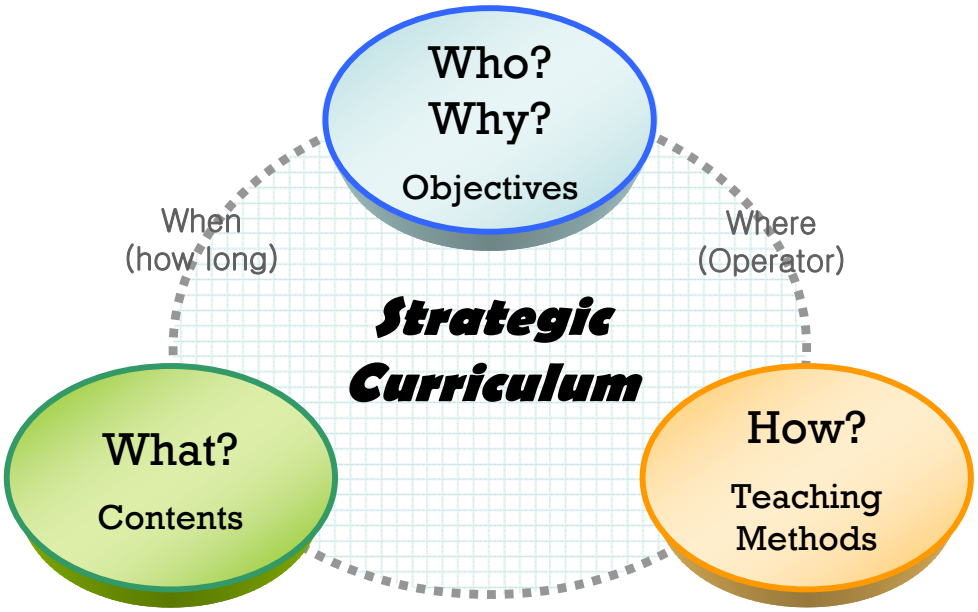
In this chapter 6, we introduce essential components of strategic curriculum model for standards and conformance. Based on the case studies of policy, education programs, and lessons learned explained in preceding chapters, we endeavor to build up useful framework to be employed by member economies whose cultural and economic environment is different.

6.1. Components

Good education is achievable through good curriculum. Good curriculum should contain various dimensions of education. These will be what (contents) and how (methods) based on who and why (students' need/objectives):

- Who/Why: the needs of students and objectives of education – e.g. understand the general importance of standardization; learn how to draft an ISO standard.
- How: the teaching methods including assessment tools – e.g. lecture, student presentation, group discussion, role-playing; mid-term exam, term paper, case study.
- What: the contents of education – e.g. history of standards, standards and IPR, conformance procedures.
- When (how long), depending on who and what, and where, program initiator and operator, should be considered as well as shown in <Figure 12>.

The subsequent chapters discuss who/why (learning objectives), what (content), and how (teaching and assessment methods) of standards education in detail.



<Figure 12> Fundamentals of Strategic Curriculum Model

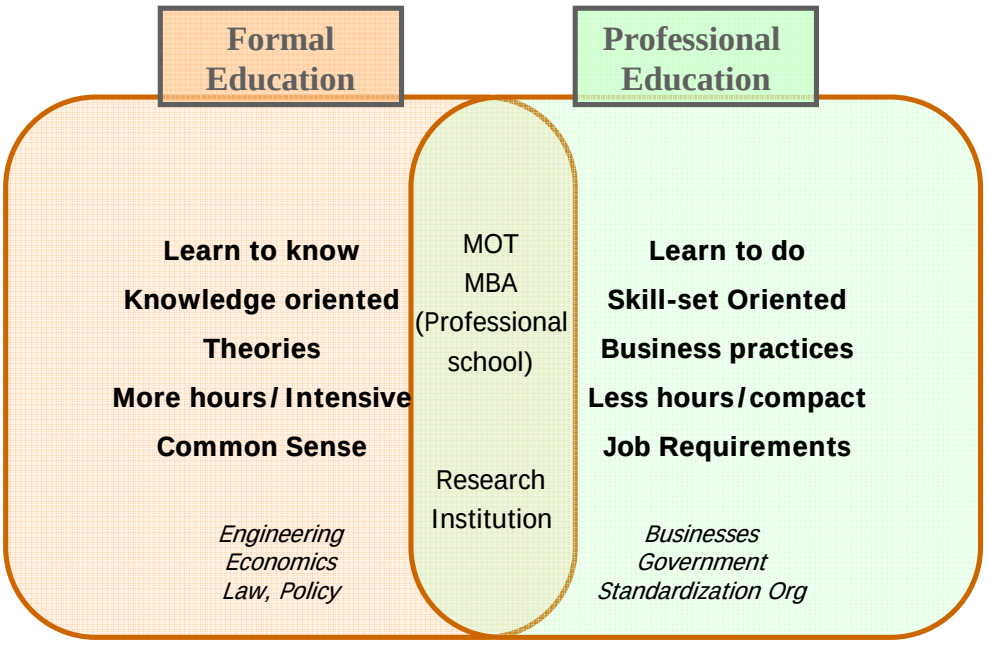
6.2. Who and Why - Objectives Influencing Program Design

The question of why - learning/teaching objective is principally connected to the needs of 'who – students'. The why of the formal and professional education is pictured in <figure 14>.

In formal education, students need to learn what society expects them to know depending on the education level. Generally, the goal of formal education is to instruct cultural or intellectual common knowledge and additionally in higher education more academic knowledge. Comparing to higher education, primary/secondary education should be easy and fun and more learning by doing is preferred with less hours of class.

In professional education, learners need to learn what their career (work, supervisor, company, profession) calls for them to do. Normally, the objective of professional education is to train professional or specialized ability or skill. Comparing to courses for committee members, NSB staff, and the courses for biz executives or government official should be compact and present case studies within abridged format.

Of course, there are common areas between formal and professional areas or between their sub-categories of education. In those cases, the difference will be lying on level of depth, length of teaching hours, and teaching methods. Also, it would be not easy to distinguish the objectives professional schools like MBA or MOT, Also, you should take notice of the reality that majority of professional education has never been educated when they were in formal education .



Primary Secondary	→	Undergraduate	→	Graduate	→	Engineer Researcher	→	Biz Executives Gov Officials	→	Committee SDO staff
Easy/Fun Daily life	→	Academic	→	Analytical		Implementing	→	Decision Making	→	Developing Administrating

<Figure 13> Differences in Formal vs. Professional Education

6.3. What – Six Contents Modules in Brief

To identify the contents required for different objectives by target groups, we have reviewed all available information including course summary, table of contents in 88 detailed fact sheets of Annex D and some available textbooks. In the process we faced some notable obstacles related to contents of the education including:

- No standardized classifications
  - same contents, but different title (found many times)
- Duplicative contents in even one textbook
  - Mismatch of chapter title and contents
- Academic or theoretical contents are limited

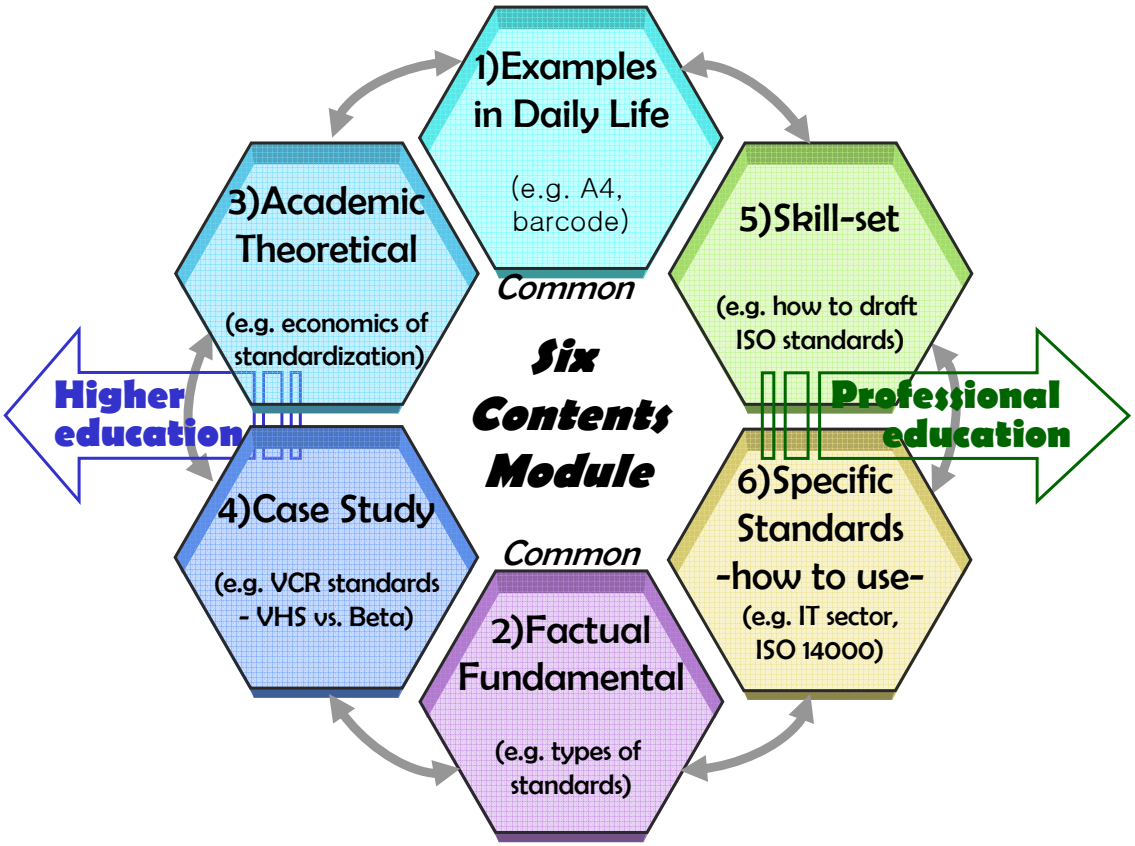
< Findings from Contents Analysis from 88 Practices>

Having overcoming the above barriers, we analyzed and classified the overall contents and have discovered the following particulars:

- Daily examples and fundamentals of standardization are found in most courses: some topics are found in all types of education materials from contest for primary/secondary students to professional education course; these are examples from daily life examples explaining the importance of standards, and definition of standards, et al.
  - around 40 cases are dealing with these contents
- Theoretical aspects of standardization chiefly found in higher education:
  - economics of standardization, standardization and innovation, standards and IPR are commonly found in higher education
  - Case #12, #17, #27, #28, #30
- Case Study chiefly found and expected to be dealt in higher education:
  - Case study is usually dealt in higher education, commonly in graduate education. It requires students to have certain mathematical or analytical ability.
  - Case #10, #12, #17, #19, #20, 21, #25, #27, #28, #29, #30
  - Some professional education includes brief case studies as well.
- Skill-set mostly found in professional education:
  - the education for skill-set is found mostly in professional education
  - Case #45, #49, #52, #53, #57, #70, #78, #86, #99
  - see <Table 5> in chapter 4.4 for details
- Industry/technology specific standards generally found in professional education:
  - The education about how to use IT technology related standards, or how to apply ISO 14000 are generally found in professional education. However, some engineering departments in universities are also introducing industry related standards.
  - Commonly as a few days of workshop or training course by standards organizations or trade associations

< Six Contents Modules Identified>

Consolidating all of the preceding discussions about who, why, what, and how, we are able to categorize the contents for standards and conformance into following six modules as illustrated the following conceptual model part 1 in <Figure 14>.



<Figure 14> Map of Six Contents Modules for Strategic Standards Education

First, Common Core Domain includes two centrally located modules: <Module 1> Example standards in daily life related contents and <Module 2> Factual or Fundamental information related contents. We place these two modules in central part of the map as they are common core contents and are considered part of any level of educations.

Second, Higher- Education Oriented Domain includes two left located modules: <Module 3> Academic/ Theoretical aspects of standards and conformance related contents, and <Module 4> Case Study of standardization related contents. We place these two modules in left part of the map, as they are commonly found in the courses in higher education, universities. However, you always have freedom to use these higher education oriented modules in professional education, either to meet specific objectives or to increase variety of an education program.

Third, Professional Education Oriented Domain includes two right located modules: <Module 5> Skill-set related contents, and <Module 6> (How to use) Specific Standards related contents. We place those two modules in right part of the map, as they are commonly found in the course in professional education. However, you always have freedom to use these professional education oriented modules in higher education, either to meet specific objectives or to increase variety of an education program.

6.4. What – Six Contents Modules in Detail

We are not challenging to list up all possible contents for the proposed six contents modules; but we are attempting to present all-inclusive list for <Module 2>, <Module 3> <Module 5> and example list for <Module 1>, <Module 4>, <Module 6>:

- All-inclusive List of contents:

  <Module 2> Factual or Fundamental information related contents.

  <Module 3> Academic/ Theoretical aspects related contents,

  <Module 5> Skill-set related contents

- Example List of contents:

  <Module 1> Example standards in daily life related contents

  <Module 4> Case Study of standardization related contents.

  <Module 6> (How to use) Specific Standards related contents

< All-inclusive List of Contents>

- **<Module 2> Factual or Fundamental information related contents**
  - Definition: factual or fundamental information solely related to standards and conformance itself, and rarely found in other classes.
  - Objective: to raise general awareness about importance and to learn factual/fundamental information in standards and conformance
  - Target Group: for all – primary/secondary, higher, professional
  - Projected Contents/Topics:

Major Classification	Sub-Classification
1.General	General - Introduction, orientation
2. Definitions	Concept and definition
3. Functions (Value)	Needs or objectives
	Functions and Effectiveness
4. History	General History, Evolution
5. Types/Classifications	General
	Who: national, regional, international
	How: De jure, De facto, Consortia/association
	What: Quality, Process, Interoperability, et al
6. National Standardization	History
	Policy, Strategy

Major Classification	Sub-Classification
	Procedures, Legal System
	Organizations including NSB, NMI, SDOs
	Impact and Challenges
	Major Current Issues
7. Regional Standardizatoin (internal)	History
	Policy, Strategy
	Procedures, Legal System
	Organizations
	Impact and Challenges
	Major Current Issues
8. Regional Standardization (external)	External regions – only where necessary
9.International Standardization	History
	Policy, Strategy
	Procedures, Legal System
	Organizations – formal
	Organizations – non-formal
	Impact and Challenges (Trade and TBT)
	Major Issues
10.Consortia Standarization	General
11.Company Standardization	Strategy
	Internal standardization
	External standardization
	Consumer needs
12.Conformity Assessment	General
	Types and Strategy
	Procedures, Legal System
	National System – Accreditation
	Other Nations – only where necessary
	International, Regional, Multi/Bi-lateral
	MRA – General
	MRA – Types and Effectiveness
13. Consumer	Users and Consumers
14. Government	Government and Standardization

* Based on analysis of #17(EU-Asia), #20(ZFIB), #23(DEVCO), #27(KSA-UEPS), #28(Erasmus), #108(ICES) and other professional education curriculum.

➢ **<Module 3> Academic/ Theoretical aspects related:**

- Definition: Interdisciplinary academic contents related to standardization; standardization with traditional academic disciplines such as economics, business management, public administration, law, engineering, science
- Objective: to learn and develop academic aspects of standardization
- Target Group: primarily for higher education
- Projected Contents/Topics:

Major Classification	Sub-Classification
General	Academic approach to standardization
History	History and Standardization (academic)
Library/Information Science	Library/Recording Management and Standardization
Human Life Science	Consumer Protection and Standardization
	Social Welfare and Standardization
Education	Education about Standardization
Sociology	Social System and Standardization (academic)
Public Administration	Regulatory Policy and standardization
	Industry/Science Policy and standardization
	R&D Policy and standardization
Political Science/ Diplomacy	International Trade and Standardization
Law	Law/Legislation and Standardization (academic)
Economics	Economics and Standardization
Natural Science	Natural Science and Standardization
	Natural Science and Measurement Standards
Medicine/Pharmacy	Medicine and Standardization
Business Management	Standardization as a Strategic Tool - Decision Making, Marketing
	Global Business and standardization
	Service Management and Standardization
	Innovation and Standardization
	IPR, Patent and Standardization (Academic)
	MBA - Business Case Analysis <Module4>
Engineering	Technology Management and Standardization
	Technology Transfer and Standardization
	Standardization in all Engineering Disciplines (Mechanical, Construction, ICT, et al) <Module 5>

* Based on analysis of current practices and potential needs.
* Some of the above topics are connected with other modules

- **<Module 6> Skill-set related:**
  - Definition: Practical skills need in standardization practices in proposing, developing, disseminating, and administrating relevant procedures. Some of them are related to typical business skills like communication, others are solely related to standardization like writing standards
  - Objective: to learn how to use and apply particular standard(s)
  - Target Group: Primarily for professional education
  - Projected Contents/Topics:

Classification/ Topics
Developing/Drafting standards – template
Communication skills – chairing/moderating a meeting
Communication - Working across cultures – cultural differences
Communication skills – language (English)
Communication skills – consensus, negotiation, discussion
Conformance Skills – test, assessment, and documentation
Administration of standardization activities
Standards Development Procedures – Practices <Module 2>
Standards for technical regulations or legislation (practices) <Module 3>
Specific industry/technology/products/issues standards - overview <Module 5>

* Based on analysis of current practices in professional education.
* Some of the above topics could be partly duplicative with other modules

< Example List of Contents>

- **<Module 1> Example Standards in Daily Life:**
  - Definition: Examples we could in everyday life to show that standards are everywhere in our lives and it is vital for safe and efficient society
  - Objective: raising general awareness level about the importance of standards
  - Target Group: for all – primary, higher, professional education
  - Possible contents (The followings are some examples):

Classification/ Topics	
Automotive – Lead Acid Battery	ISBN
Barcode to RFID	JPEG – pictures
Cellular Phone Charger	Measurement Standards
Color	Memory Card Standards
Compact Fluorescent Lamp	MP3 Player
DMB	Paper Size
Wine Glass	Car Airbag

- **<Module 4> Case Study related:**
  - Definition: Business cases describing different aspects of standard and conformance.
  - Objective: to learn and develop practical impacts of standardization in real business practices
  - Target Group: Primarily for higher education
  - Possible contents (The followings are some examples):

Classification/ Topics
Case Study of Agricultural Standards
Case Study of Container Standards
Case Study of Electronic Fee Collection Standards
Case Study of VCR (VHS and Beta)
Case Study of Cell Phone (CDMA vs. GSM)
Case Study of ISO 9000 or 14000

* Simplified <Module 4> Case Study could be used as <Module 1>
* Topics of case study involves specific standards, Industry, technology, or companies.
* Some of the above topics could be partly duplicative with other modules

- **<Module 5> Sector specific standards related:**
  - Definition: How to use or apply particular standards. Commonly the standards and its explanatory notes are teaching materials.
  - Objective: to learn how to use and apply particular standard(s)
  - Primarily for professional education (also found in engineering disciplines in higher education)
  - Possible contents (Examples):

Classification/ Topics
Management Systems Standards – Quality Management and Application
Management Systems Standards – Environmental Management and Application
Chemical Engineering related Standards and Application
Mechanical Engineering related Standards and Application
Service Standards and Applications
Social Responsibility Standards and Application
RFID Standards and Application

* Simplified overview of <Module 5> could be used in other modules
* Topics can be chosen by Industry, technology, products.
* Some of the above topics are connected with other modules

6.5. How – Teaching Methods

After identifying what to teach in education programs, it is moment to decide the modality of teaching and students' assessment.

Active teaching/learning shifts the focus from the teacher and delivery of course contents to the student and active engagement with the material. Through active learning practices and modeling by the teacher, students drop the traditional role as passive receptors and learn and practice how to capture knowledge and skills and use them.

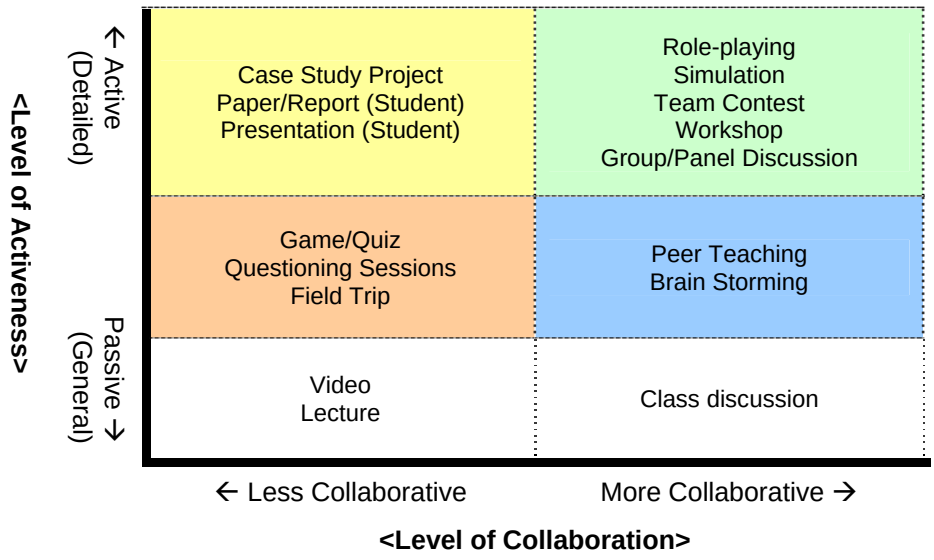
The practices of primary/secondary education, as partly summarized in Chapter 5.4, reveal that the contest type of group activities are widely adopted and used in the education for children. Also, in the practices of higher and professional education, case study and simulation are recommended modality to encourage students to participate and to develop required skills.

Assessment of student achievement is an important part of education program, and is associated with teaching methods. In addition to traditional test methods, the next alternative assessment devices enable you to provide measures of student performance, including:

- Essays, Term Papers
- Projects, Case studies; Portfolio
- Performances; Simulations; Peer evaluation

We already learned from lessons in chapter 5 that students prefer case studies, group activities, learning by doing. The <Figure 15> displays different types of teaching methods by the following two categories:

- Level of collaboration: Should a student learn alone or work together with others?
- Level of activeness: Should a student actively participate in classes?



<Figure 15> Various Methods in Teaching and Assessment

6.6. Strategic Curriculum Model Abridged

We endeavor, combining overall findings and suggestions in 6.1 to 6.5, to present the following **Strategic Curriculum Model (Abridged)** for Standards and Conformance Education. The abridged model is composed by the major factors who, why, where, what and how in planning and operating education programs.

< Table 7 > Strategic Curriculum Model Abridged

Who -students-	Why -objectives-	Where -operator-	What (Contents)		How -methods-	Good Practices (Annex C)
			-1st-	-2nd, 3rd-		
Pre-School	Awareness	Gov NSBs	Module 1 -examples (simplified!)		Game Quiz	N/A
Primary/ Secondary Education	Awareness	Gov NSBs	Module 1 -examples (simplified)	Module 2 (simplified)	Contest Camping Quiz Game	#7 Turkey #6 Thailand #3 Philippines #8-10 UK
Higher Education -Under- graduate	Awareness/ Specialized Knowledge	Gov NSBs SDOs Univ	Module 2 -fundamental Module 3 -academic Module 1 -example	Module 4 Module 5 Module 6	Team Project Presentation Field Trip	#12 CJLU #27 KSAUEPS #28 Erasmus
Higher Education -Graduate	Specialized Knowledge/ Theory	Univ Gov NSBs SDOs	Module 3 -academic Module 4 -case study	Module 6 Module 2 Module 5 Module 1	Case Study Term Paper Workshop	#25 Tokyo Un. #17 EU-Asia #18 PQI #19 Compienge #13 CJLU
Professional Education -Gov -Executive	Strategic Decision/ Policy Development	NSBs SDOs Gov	Module 2 -fundamental Module 3 -academic Module 4 -case study (Abridged!)	 Module 1 Module 5 Module 6	Workshop Panel Discussion	#67 TISI(gov) #89 ANSI(gov)
Professional Education -Committee Members -SDO staff	Practical Skills or Ability	NSBs SDOs Gov	Module 5 -skill-set	Module 4 Module 3 Module 2 Module 1 Module 6	Simulation Role Paying Workshop	#48 ISO online #49 ISO training # many bust not listed all here
Professional Education -Engineer -Researcher	How to use Specific Standards	Biz Univ R&D	Module6 -standards	Module 4 Module 3 Module 2 Module 1 Module 5	Experiments Practices	Not included in this Case Study, but many are operated by NSBs and SDOs

7. Summary Conclusions

Back to the first page of this guideline, *it would be idealistic situations students in schools or universities are educated about the fundamentals and implications of standards and conformance, and start their career in government, businesses, standards and conformance related organizations or research institutions*.

We put forward that standards and conformance be incorporated into education to make students 'be ready to work', and the objective of this guideline is to provide a handbook to support you in developing policy and in planning or implementing education programs about standards and conformance via case studies and presenting strategic curriculum model.

The case study of how to set up strategy, in chapter 3, shows following facts:

- Majority of APEC members have reflected the importance of standards education in their national strategy. The strategy of Japan, Korea, Vietnam and USA can be considered as good practice
- However, More in-depth with specific action plans and wide-ranging strategies with formal education need to be considered.
- APEC Economies give priority to Undergraduate Education in formal education, to Government official and committee members in professional education.
- Organizing a committee for standards education will be Useful.

The case study of how to plan and operate education programs, based on analysis of 118 cases worldwide in Chapter 4, briefs you that:

- International organizations have been more and more paying attention to higher education, and trying to reach out universities and academia. It is worthwhile to recognize that ICES, the first international forum on standardization education is now discussing formalization.
- In primary/secondary education, leadership by government or national standards bodies is call for to initiate education programs
- In primary/secondary education, most reasonable approach will be developing modules or chapter to be part of formal education curriculum in primary/secondary education. The case of Annex C #7 Turkey, #6 Thailand, #3 Philippines, and #8-10 UK can be considered as good practices.
- In under undergraduate level of higher education, The case of #12 China Jiliang University(most intensive), #27 KSA UEPS program (most expanded), and #28 RSM Erasmus University can be considered as good practices.
- In under graduate level of higher education, Noteworthy enough is that six graduate courses (F4) - the cases of #25 Tokyo Univ, #29 RSM Erasmus, #34 Catholic, #20/21 ZFIB, #24 JSA and #30 Moratuwa – are targeting for similar spectrum of students in engineering, MOT or MBA, and the contents of those are more focusing on how standards function as strategic management tool. With the interdisciplinary characteristics, at graduate level, standards education seems to be fitting well as part of MOT or MBA curriculum.
- In professional education, majority of the professional education programs are designed to build particular capacity or skills. Based on the 65 practices a classification of skill-set is presented.

The case study, in Chapter 5, also analyzed lessons learned from survey as follows:

- Clear Objectives and Target Oriented Programs are key to success
- Try to Make Teaching Materials Sexy.
- 'Daily Life Examples or Case Studies' are preferred by all levels of student
- Exciting is 'Learning by Doing' – recommending of hands-on learning
- Teacher's Training and Networking is important
- Leadership and Collaboration needed particularly

Finally, a Strategic Curriculum Model is proposed in Chapter 6 as follows.

- Consolidating all of the preceding discussions about who, why, what, and how, we are able to categorize the contents for standards and conformance into following six modules. The six modules could be grouped into three domains.

  <Module 1> Example standards in daily life related contents
  <Module 2> Factual or Fundamental information related contents.
  <Module 3> Academic/ Theoretical aspects related contents,
  <Module 4> Case Study of standardization related contents.
  <Module 5> Skill-set related contents
  <Module 6> (How to use) Specific Standards related contents

- First, Common Core Domain includes two centrally located modules: <Module 1> Example standards in daily life related contents and <Module 2> Factual or Fundamental information related contents. We place these two modules in central part of the map as they are common core contents and are considered part of any level of educations.
- Second, Higher- Education Oriented Domain includes two left located modules: <Module 3> Academic/ Theoretical aspects of standards and conformance related contents, and <Module 4> Case Study of standardization related contents. We place these two modules in left part of the map, as they are commonly found in the courses in higher education, universities. However, you always have freedom to use these higher education oriented modules in professional education, either to meet specific objectives or to increase variety of an education program.
- Third, Professional Education Oriented Domain includes two right located modules: <Module 5> Skill-set related contents, and <Module 6> (How to use) Specific Standards related contents. We place those two modules in right part of the map, as they are commonly found in the course in professional education. However, you always have freedom to use these higher education oriented modules in professional education, either to meet specific objectives or to increase variety of an education program.
- In the end with chapter 6.5, Strategic Curriculum Model Abridged for Standards and Conformance Education is presented; the abridged model is composed of the major factors who, why, where, what and how in planning and operating education programs.

We hope this guideline function as foundation stone, getting close to the idealistic situation that all the students are educated about the importance of standards and conformance in schools and universities and 'be ready to work' in their career when they face relevant challenges and ultimately strengthening the overall competitiveness in trade and investment of APEC member economies.

Annex A

Project Survey Questionnaire

APEC Survey
to develop Strategic Education Model
for Standards and Conformance

*APEC Project CTI21/2007

APEC Sub-Committee on Standards and Conformance (SCSC)

(Sponsored by: Korea, China, Indonesia, Japan, Singapore, Thailand, USA, Vietnam)

Submitted by: Republic of Korea

Requested Action: Survey Response ***by Jun 8, 2007***

Note: Your timely contribution is very much appreciated.

All the recipients of this survey are kindly invited to respond by Jun 8, 2007
to the project editor, Mr. Donggeun Choi of Korean Standards Association.
(Email: its2win@kisi.or.kr, Phone:+82-2-6009-4828, Fax:+82-2-6009-4819)

You are cordially invited to participate in the Survey for the project of 'Strategic Education Program on Standards and Conformance'

12 March 2007

To: APEC SCSC Member Economies

Subject: APEC Survey to develop 'Strategic Education Model for Standards and Conformance'

The APEC Sub-Committee on Standards and Conformance (SCSC) is undertaking to facilitate cooperation to build 'Strategic Education Model for Standards and Conformance' by sharing information and experience on education on standards and conformance worldwide.

APEC has commissioned the Korean Ministry of Commerce, Industry and Energy with support from Korean Standards Association to conduct the project.

The objectives of this questionnaire are:

- To identify national strategy and priorities on education for standards and conformance.
- To share experiences and lessons learned in preparing and deploying education programs on standards and conformance

On behalf of the APEC SCSC member economies, we are writing to invite your participation in this important initiative. Attached please find survey questionnaire as a starting point for the project. We worked to simplify the survey questionnaire so it can be completed within modest amount of time. You are cordially requested to respond ***no later than Jun 8, 2007***, two weeks before the 2007 SCSC II meeting.

Thank you in advance for your contribution. If you have questions or suggestions, please contact Project Editor, Mr. Donggeun Choi by email its2win@kisi.or.kr or telephone +82-2-6009-4828.

Sincerely,

Jintae KIM
Project Overseer of APEC CTI21/2007T
Director of Standards and Quality Division
Korean Ministry of Commerce, Industry and Energy

Part 1. National Strategy and Priority

1.1 National Strategy

Questions	YES	NO
1.1.1 Does your economy have a national strategy for standards and conformance? → *website(if available):* _____		
1.1.2 If yes in 1.1.1, does your national strategy for standards and conformance include the importance of education activities?		
→ If yes, please kindly provide its text (either full or summary) in English:		
1.1.3 If yes in 1.1.2, please answer to the following sub-questions. The strategy includes :		
a) Encouraging to increase public awareness on the value of standards and conformance (in general)		
b) Encouraging to develop and implement education programs for policy makers, businesses, et al on standards and conformance (professional education)		
c) Promoting to embed the value of standards and conformance in curriculum of schools/universities (formal education)		
d) Promoting to build/enhance communication network for standards and conformance matters among academia, business, et al (networking)		
e) Boosting to develop database to facilitate relevant activities such as lectures, education providers, et al (database) → *website(if available):* _____		
f) Emphasizing other aspects of standards education → *please specify:* _____		
1.1.4 If yes in 1.1.2, who is the appropriate contact point(s) for education on standards and conformance?		

Organization /Ministry	Name:	
	Website:	
Contact Person	Name:	(Mr/Ms)
	Position/Title:	
	Division :	
	Phone:	
	Fax:	
	Email:	

* *You may provide more than one contact information*

1.1.5	If no in 1.1.2, does your economy plan to include importance of education activities on standards and conformance in the (revised) national strategy within a few years?		

1.2 National Strategy Committee

Questions	YES	NO
1.2.1 Does your economy have a national committee for standards and conformance in general? → *committee name:* _____ → *weblink (if available):* _____		
1.2.2 Does your economy have national or other domestic (e.g. SDO's) committees for education on standards and conformance? → *committee name:* _____ → *weblink(if available):* _____		

→ If available, please kindly provide the working scope or objectives of the (education) committee with a few sentences:
- ✓
- ✓

1.2.3 If yes in 1.2.2, please kindly provide contact information of the committee on education using the following table:

Committee	Name:	
	Authorized by:	(e.g. ANSI)
	Website:	
Chair	Name:	
	Affiliation:	
	Position:	
	Phone:	
	Fax:	
	Email:	
Secretariat	Name:	
	Affiliation:	
	Position:	
	Phone:	
	Fax:	
	Email:	

* *You may provide more than one contact information*

1.3 National Priority

Your economy might have priority to some target groups (objectives) over the others in planning and deploying education programs on standards and conformance. Please kindly provide the priority of your economy using the following table:

Classification	Type* of Target Groups (Students or Audience)	National Priority	Activity Status* in your economy
		N: Not Specified M: Medium H: High	N: None P: Having Plan D: Developing Curriculum O: Operating/ed
Formal Education	**Primary School** (elementary school)		
	Secondary School (middle/high School)		
	University Undergraduate Course (bachelor degree)		
	University Graduate Course (master/doctor degree)		
Professional Education	**Business (Association) Executives/ Managers**		
	Business (Association) Working-level Staff		
	Government Officials (public sector regulators)		
	Standards Development - Participating Experts		
	Standards Development - Chair/Secretariat/et al		
	Multi Targets or Unspecified Parties		
	Others: (please specify: _____)		

<Sample>

e.g.	**Secondary School**	M (Medium)	D (Developing/revising Curriculum)
e.g.	**University Undergraduate**	H (High)	D (Developing/revising Curriculum) O (Operating)
e.g.	**Business Executives**	H (High)	N (None): * we need good textbook

** You may select multiple options to describe 'activity status' (if activities are occurring simultaneously)*

** Please use this 'Type' in responding to the questions 2.1 and 2.2*

Part 2. Experiences and Lessons Learned

2.1 List of Experiences (Completed or In-Operation in 2006~2007)

Your economy might have some experiences in developing or operating education programs (projects), which are useful references to other economies. Please kindly provide a list of experiences of education using the following table.

For the sake of time and efficiency, this survey is NOT asking information about education/training on SPECIFIC standards (on ISO 9001, Aerospace, Construction, Electronics, et al). Also, this survey is asking you to provide experiences completed or in operation in 2006-2007 only. (However, you are more than welcome to provide information prior to 2005 if you consider they are relevant.)

	Operator (website)	Title (Program/Project)	Type (target groups)*	Note
1				
2				
3				
..				
..				

<Sample>

e.g.	TISI (www.tisi.go.th)	The Project on Integrating Standardization in Education	F2) Secondary School (NB: Teachers as well)	Various activities
e.g.	ANSI (www.ansi.org)	ANSI Training Course #209: Effective Business/Industry Participation in Standards Development: Strategies for Success	P6) Multi-targets or unspecified interested parties	One and a half day
e.g.	JSA (www.jsa.or.jp)	Development of Teaching Material – General Knowledge field	F3) University Undergraduate Course	Textbook
e.g.	KSA (www.ksa.or.kr)	KSA-University Standards Education Program - Future Society and Standards	F3) University Undergraduate Course Students	One semester (32-48 H)

**** 'Type' column: please select one of the followings (refer to page 4. question 1.3):***

A) Formal Education
- F1) Primary school
- F2) Secondary school
- F3) University undergraduate
- F4) University graduate students

B) Professional Education
- P1) Business (Association) Executives/Managers
- P2) Business (Association) Working-level Staff
- P3) Government Officials
- P4) Standards development - Participating Experts
- P5) Standards development - Chair/secretariat
- P6) Multi-targets or Unspecified parties
- P7) Other Target Groups (please specify: _____)

2.2 Fact Sheets of Experiences

Please kindly provide more detailed information about the list of experiences you provided in question 2.1 using the following fact sheet template. You may present the fact sheets for either all or selectively some important experiences.

Title (weblink)	(weblink:)	
Operator (website)	(website:)	
Type (Target Groups)	(please use 'Type' in question used in 2.1)	
Learning Objectives	In this program, the audience (students) learn : ✓ ✓ ✓	
Year (with number of participants)	✓ ✓ ✓	
Operation Summary	✓ ✓ ✓	
Textbook(Syllabus) or Curriculum Summary	Title	*(language :)*
	Authors, Publisher, Year	(in case of textbook)
	Table of contents (curriculum or Syllabus)	
	Weblink	(if available):
Lessons Learned	→ Please use the attached form in 2.2.A (2.2.B, 2.2.C,...)	

**** Submitted by (please contact following person for further information):***

Economy	
Org/Ministry	
Position	
Name	
Phone, Email	

<Sample>

Title (weblink)	KSA(Korean Standards Association) – University Standards Education Program (Korean) 'Future Society and Standards' (weblink: http://www.kssn.net/StdLect/Intro/Intro_list1.asp)	
Operator (website)	KSA (Korean Standards Association) (website: www.ksa.or.kr)	
Type (Target Groups)	F3. Formal Education - University Undergraduate Student (please use 'Type' in question used in 1.3 or 2.1)	
Learning Objectives	In this program, the audience (students) learn : ✓ Why standardization is important in global trade ✓ How standards are developed ; who develop standards domestically and internationally ; where to find standards and related information ✓ How standards work as a stragetic Management tool, et al	
Year (with number of participants)	2004 (982 students in eleven universities) 2005 (4,830 students in thirty five universities) 2006 (6,681 students in forty six universities)	
Operation Summary	Open for university undergraduate students (all majors/grades) Two(32hours) ~ Three(48hours) Credits per semester Team Teaching Methods (Teachers from various sectors) One Field Trip per semester Flexibility in specific course design to reflect different major /levels Website for teaching materials, exams, teachers' community Operators manages Lecture Database	
Textbook Summary (if applicable)	Title *(language)*	Future Society and Standards *(Korean)*
	Authors, Publisher, Year	Mr. PARK, et al (fourteen co-authors) Korean Standards Association, 2004-2007
	Table of contents	**PART 1 : Introduction to Standardization** Ch1. Standardization Overview Ch2. International Standardization Ch3. Industrial Standardization in Korea Ch4. Company standards and Quality Management **PART 2 : Application of Standardization** Ch5. Application of company standards Ch6. Conformity assessment Ch7. Standards & IPR
	Weblink	(if available) : Not available
Lessons Learned	→ See three lessons attached: 2.2.A, 2.2.B, 2.2.C	

**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Senior Standards Analyst
Name	Mr Donggeun CHOI
Phone, Email	+82-2-6009-4828, its2win@kisi.or.kr

2.2.A Lessons Learned Write-up Template

Your economy or organization might have some lessons learned in planning and deploying education programs on standards and conformance. Please kindly share the lessons using the following format:

Lesson Title	(Category: Planning/ Textbook /Teaching Methods/Operation/Website/Others)
Date	(MM-YYYY) *(when lessons learned)*
Context (guide: 1~2 paragraphs)	*(Describing the environment (situation) of lessons learned: Please include basic questions such as what, why, when, where..)*
Lesson Learned (guide: 0.5 ~1.5 pages)	*(Describing messages learned from success/failure cases:* *- What was done right? What would one do differently?* *- How could one be more effective in the future?* *- What was the impact of market factors?* *- What "lesson learned" would one pass on to others?)*
Source Reference	(if applicable)

**** Submitted by (please contact following person for further information):***

Economy	
Org/Ministry	
Position	
Name	
Phone, Email	

<Sample>

2.2.A-4. Make teaching materials and methods FUN and SEXY

Lesson Title	▷Category: Textbook and Teaching Methods◁ **Make teaching materials(textbook) and methods FUN and SEXY**
Date	Feb 7~9, 2007 (in the discussion of ICES 2007 workshop) *ICES: International Committee for Education about Standardization
Context (guide: 1~2 paragraphs)	In many countries it turns out to be difficult to attract students under the theme of standardization. This problem may be related to the educational materials and teaching methods used in education courses for standardization.
Lesson Learned (guide: 0.5 ~1.5 pages)	The ICES 2007 Workshop participants expressed sympathy that the content itself and the presenting way of content be **FUN and SEXY** in any classes of education on standardization. It is clear that **'CASE STUDIES'** are one of the most useful and attractive tools to deal with standardization issues. A Good case study could be highlighted with various important aspects of standardization, such as economics, business management tool, patent, de jure vs. de facto, et al. One good example case discussed in the workshop was RAMBUS among others. In the case of teaching methods, you might pay attention to a)'team-teaching method', particularly inviting speakers from businesses and b) mock meeting of standardization (simulation exercises). **TEAM TEACHING METHODS, particularly inviting business experts or executives as speaker**, make courses more energetic and cheerful. However, a possible disadvantage of invited speakers tends to lack of teaching experience. Also, a **SIMULATION EXCERCISE** is pointed out to be a cheerful mechanism. A memorable case is the program developed by ISO. ISO has developed an e-learning course which uses a teaching case, a simulation, for educating experts participating in ISO standards development process. The participants of this course takes play the role of national delegates of a imaginary country "Southistan" and simulates the standardization meeting. This kind of mock meeting of standardization, would also be useful for university students.
Source Reference	Summary as participant in the ICES 2007. Referred to the report about ICES 2007 Workshop written by workshop co-chairs Henk J. de Vries (Erasmus Univ) and Tineke M. Egyedi(TU Delft). Please visit the website http://www.tbm.tudelft.nl/webstaf/tinekee/ICES2007/index.html for more information about ICES 2007 workshop.

**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association (KSA)
Position	Senior Standards Analyst
Name	Mr Donggeun CHOI
Phone, Email	+82-2-6009-4828, its2win@kisi.or.kr

2.3 Important Literature (Strategies, Value, Case studies, Textbook, et al)

If there are important literature (book, report, article, speech, presentation, website, et al) existing in your economy, which are vital to develop/deploy education programs, please kindly provide relevant information using the following table:

1	**Title**	(language)
	Author/Publisher/Year	
	Downloadable Weblink	(if available) :
2	**Title**	(language)
	Author/Publisher/Year	
	Downloadable Weblink	(if available) :
3	**Title**	(language)
	Author/Publisher/Year	
	Downloadable Weblink	(if available) :
…	**Title**	(language)
	Author/Publisher/Year	
	Downloadable Weblink	(if available) :

<Sample>

e.g.	**Title**	Economic Impact Assessment of the International Standard for the Exchange of Product Model Data (STEP) in Transportation Equipment Industries (English)
	Author, Publisher, Date	Michael P. Gallaher et al, NIST, Dec 2002
	Downloadable Weblink	http://www.nist.gov/director/planning/impact_assessment.htm#recent
e.g.	**Title**	Standardization Essentials: Principles and Practice (English)
	Author, Publisher, Date	Steven M. Spivak; F. Cecil Brenner, CRC, Mar 2001
	Downloadable Weblink	purchaseable at www.amazon.com
e.g.	**Title**	SIIT 2001 (The 2nd IEEE Conference on Standardization and Innovation in Informatino Techonolgy) *It's a bi-annual Conference on standardization innovation (English)
	Author, Publisher, Date	Conference Proceedings – Many Authors, 2001
	Downloadable Weblink	http://www.siit2001.org/movies/
e.g.	**Title**	ISO MEMORY *It's online-game (English)
	Author, Publisher, Date	ISO Central Secretariat, 2006
	Downloadable Weblink	http://www.iso.org/iso/en/commcentre/isomemory/startpage.html

Annex B

National Strategy on Standards Education
– relevant full/summary text -

B1. Canada (surveyed/researched)

In the Canadian Standards Strategy 2005-2008:

5. Represent fully the range of standardization stakeholders
5.1 Support the further development of the SCC Member Program
f) Research and make recommendations on the development and application of a "Standards & Conformity Assessment Education Module" for use by technical colleges and universities.

6. Communicate effectively the role and benefits of standardization and conformity assessment practices

B2. Chile (surveyed)

We don't have a "text" about this or a text where we give the importance of education activities. But, we know the importance and we promote it trough meetings with Regulatory Bodies (specially trough our National Commission on Technical Barriers to Trade) and business, and we give information about the importance of TBT's matters through capacity buildings activities.

B3. China (surveyed)

Establish and improve the training system on standardization education.

B4. Hong Kong China (surveyed)

The Product Standards Information Bureau (PSIB) of the Innovation and Technology Commission (ITC) of the Government of HKSAR (HKSARG) provides a comprehensive range of standards-related services to promote general awareness of standards and in particular to local enterprises, provide them with the latest information on local and overseas standards and technical regulations, and assist them to comply with these requirements in their manufacturing, exports and provision of services and to enhance quality and competitiveness.

In terms of school education, standards and conformity does not form a separate subject in our curriculum for primary and secondary education. General concepts

of the importance and benefits of international standards compliance would be infiltrated across subjects (e.g. Primary General Studies, Liberal Studies in senior secondary) as integrated general knowledge in primary and secondary education. More in-depth and explicit information on standards and conformance would be involved in specific disciplines where necessary in higher education. It is up to individual education institutes to decide at tertiary level.

B5. Japan (surveyed)

"Long Term Strategic Guidelines Innovation 25 "
http://www.kantei.go.jp/jp/innovation/index.html

B6. Korea (surveyed)

National Standards Master Plan (2006~2010) - The 56 page plan spends two pages for education activities

4-3. Training Standards Experts and building Experts Network
- Establishing department of standardization in universities in order to build education infrastructure
- Operating professional education for businesses
- Initiating private certification scheme for standardization experts
- Utilizing IT & web technology to build manage standards experts

4-4. Increasing Awareness about Standardization and Strengthening Promotion/Education Activities
- Developing/Operating more centralized national standards information network
- Spreading out standardization-mind among for Secondary school students (teenagers)
- Extending standardization program in universities
- Conducting research and survey projects to estimate the level of awareness and have feedback about standardization policy
- Preparing systematic incentive systems for standardization activities.

B7. Malaysia (surveyed)

National Standards Strategy and Action Plan (NSSAP)

Strategy 5:
Greater awareness and usage of Malaysian Standards by the Government, private sector and the consumers in procurement, trade, production, manufacturing and provision of services

B8. Singapore (surveyed)

Taken from Element 7 of the Singapore Standardisation Strategy:

'Building awareness and understanding of the values of standardisation to all stakeholders and the general public will be vital for the long-term success of Singapore' standardisation efforts and goals. Communication and education initiatives including exploring web-based training in which modules on topics of standardisation are made available online, publishing a book on the basics of standardisation to increase general awareness in Singapore, and promotional and training seminars for new and upcoming standards.

B9. Chinese Taipei (surveyed)

From BSMI

The national strategy for standards and conformance (Strategy for National Standard Development) is composed of seven strategic objectives and two of which are the plans for education and training on the relationship between standards and the daily life of the general public as well as on building the capacity and expertise for specialists and professionals in different domains.

Aside from education/training itself, one of the seven strategic objectives is to utilize information and communications technology to facilitate education/training

From NCC

Article 10
For the purpose of promoting the development of telecommunications enterprises, the competent authority may, in consultation with the Ministry of Education, establish telecommunications schools, or additional relevant departments and/ or graduate schools, in senior high or vocational schools, colleges and universities so as to develop telecommunications specialists; and may request a telecommunications enterprise to allocate a proportionate amount of its turnover for research and development.

B10. Thailand (surveyed)

- The Project on Integrating Standardization in Education
- The Project on Promotion of Industrial Standards, Enhancement of Quality of Life, Protection of Consumers' Right
- Project on Increasing Manufacturers' Capacity of Production and Management System to International Standards Level

B11. UK (researched)

UK National Standardization Strategic Framework (NSSF):

– NSSF represents six pillars: Business, Government, Infrastructure, International, Awareness

In the Awareness Pillar, NSSF describes as follows:

Establish an awareness of standardization, an understanding of waht it is and does; develop appropriate skills to use standards effectively and embed standardization in the skills and science base

- Increase the awareness of standards and standardization in order to enhance the use of standardization as a strategic tool for businesses and government, communicating to decision makers the role and benefits of standards and how to take advantage of standization.
- Promote access to and understanding of standardization activities and processes to current and future participants, minimising duplicatoin duplication across the infrastructure by establishing a first pint of contract for standardization needs
- Intergrate knowledge of standards into the policy of raising the skills base for business, and embed the concept of standardization in formal education curricula to ensure appropriate levels of understanding in future generations of users, developers of standards and consumers.

B12. USA (surveyed)

Excerpt from the *United States Standards Strategy* (published 12-05)

– Establish standards education as a high priority within the United States private, public and academic sectors

Education programs covering the development and implementation of standards need to become a high priority within the United States. These programs must focus on the needs of leaders and top executives, those who participate in the development of standards, university and college students, and other interested parties. Tactical initiatives for all stakeholders, including *standards developers, ANSI, government*, and *academia* include:

- Develop new or significantly enhance existing standards education programs that address the significance and value of standards to the well-being of the United States and global economies.

- Develop or significantly enhance standards education programs that address the needs of specific groups within the United States. These programs must reflect the multidisciplinary environment in which standards development takes place and address national and international standards development procedures; the relationship between private and public sector standards; the environment, health, safety, sustainability, international trade, public policy, competition, legal, economic benefits, and strategic considerations; and how to balance the interests of stakeholders.

- Develop a national database of standardization case histories. The database should be jointly managed by the American National Standards Institute and the U.S. Department of Commerce.

- Encourage universities and colleges within the United States to create standardization education programs in fields of study such as engineering, science, technology, government and public policy, business, economics and law.
- Facilitate and enhance the creation of a communications network for standardization education programs among all interested parties in the private, public and academic sectors. Utilize Internet technology to the fullest extent possible to facilitate the development of e-learning and standardization education programs.

B13. Vietnam – Draft National Quality Policy (surveyed)

Note: This is unofficial translation.

1. Excerpts from Draft National Quality Policy of Vietnam *(STAMEQ)*

IV. MAIN SOLUTIONS AND POLICIES

4) Developing human resources in SMTQ

Enhancing education and training in SMTQ; establishing a regular and modern training institute in SMTQ; including SMTQ knowledge in the curricula of universities and technical colleges and schools; integrating quality awareness into curricula at high schools

Expanding and strengthening consultancy, training, workshop activities in order to popularize advanced methods and best practices of quality management to everybody in every area.

Improving skills of human resources in SMTQ area through in-country and abroad training courses.

...

Responsible for Implementation

c) Ministry of Education and Training (MoET) shall coordinate with Ministry of Science and Technology (MoST) in developing of the curricula on SMTQ for using in universities, colleges, technical schools and providing in high schools' curricula on quality awareness ".

2. Excerpts from Draft Strategy for development of Vietnam's Standardization activities to the year of 2015 *(Prepared by STAMEQ)*

Strategic Orientation 8:

Strengthening education and training activities to intensively promote greater awareness, knowledge on standardization and improve professional skills in standards development

❖ ***Goal:***

Improve public awareness and knowledge on standardization and technical regulating, especially for those working in governmental agencies and businesses. Develop continuously high-skilled human resources for future standardization work by means of education and training.

❖ ***Action plans:***

a) Prepare and use standardized curricula and teaching materials on standards and conformance for different education/training levels and target groups including: Executives/Managers, working-level staff, newcomers, etc.;

b) Set up and implement appropriate education/training programmes on standards and conformance in academic and professional institutions such as: universities, colleges, vocational/technical schools, etc;

c) Encourage and promote involvement and support of different circles of society and interested parties in standards and conformance education/training;

d) Set up and implement distance education/training and e-learning programmes through mass media like television and broadcasting.

B14. APEC (researched)

- **APEC Joint Ministerial Statement (Nov 2006, Hanoi)**

  Ministers recognized the importance of standards education and encouraged members to develop reference curricula and materials to address the significance of standards and conformance to trade facilitation in the region.The Project on Integrating Standardization in Education

- **APEC CTI/SCSC resolution (Feb 2006, Hanoi)**

  The APEC SCSC agreed to take actions, to promote the inclusion of Standards and Conformity Assessment and related activities in the curricula of schools and universities in the APEC region.

  Where relevant, this would be done in conjunction with relevant APEC fora with responsibility for educational matters.

B15. UNECE WP6 (researched)

UNECE Recommendation "I".
METHODOLOGICAL STUDIES AND EDUCATION (1970)

Working Party on Technical Harmonization and Standardization Policies has agreed to recommend that:

I.1 ECE Governments should, in collaboration with appropriate intergovernmental and other organizations and taking into account the activities of the International Organization for Standardization (ISO) and the International Electro-technical Commission (IEC), consider the possibility of encouraging:

- the introduction of the subject of standardization into the scientific and technological curricula of educational establishments;
- the education and training of specialists in standardization;
- the further study in depth of the methodology of standardization supported by international collaboration.

Annex C

Summary List of
118 Standards Education Practices

(Based on Survey and Research)

[Sorted first by the column of target groups, and second by Economy]

- No.001 ~ No.010: Primary and Secondary Education
- No.011 ~ No.037: Higher Education (Undergraduate and Graduate)
- No.038 ~ No.102: Professional Education (non-formal or training)
- No.103~ No.118: General activities (mainly by international organizations)

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
1	F1) Primary F2) Secondary	Japan	METI (http://www.meti.go.jp/) JSA (http://www.jsa.or.jp)	Standards Education Delivery Service (Lectures on Demand)	45-100 minutes	Survey Annex D1
2	F1) Primary F2) Secondary Camping/Contest	Korea	KSA (www.ksa.or.kr)	Standards Olympiad	2 days of event	Survey Annex D2
3	F2) Secondary	Korea	KSA (www.ksa.or.kr)	Textbook Sub-chapter Development for Secondary School Students	Textbook is under development (by 2010) 2 workshops held for Teacher's training	Survey
4	F2) Secondary	Philippines	BPS (www.bps.dti.gov.ph)	Standards Blitz – Standards in the Curricula of Secondary and Alternative Learning Education	a. F2 - Secondary School teachers and students b. F2 – Instructional managers and Mobile teachers: secondary level c. F2 - Mobile learners: secondary level	Survey Annex D3
5	F2) Secondary (including Teacher)	Philippines	BPS (www.bps.dti.gov.ph)	Standards Blitz – Standards' Essay Writing Contest		Survey Annex D4
6	F2) Secondary (including teachers)	Thailand	TISI (www.tisi.go.th)	The Project on Integrating Standardization in Education	Various activities	Survey Annex D5
7	F2) Secondary	Turkey	TSE	Standardization and Quality	Textbook is available for one single subject	Research Annex D6
8	F1) Primary (Age 7-11) Online Information	UK	BSI (www.bsieducation.org)	BSI's Education Programme	Topic Areas: Bridges and tunnels, Food packaging, Shoes, Sustainability * Online Game	Research Annex D7
9	F2) Secondary (Age 11-14) Online Information	UK	BSI (www.bsieducation.org)	BSI's Education Programme	Topic Areas: Bridges and tunnels, Food packaging, Playgrounds, Sustainability, Textiles	Research Annex D8

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
10	F2) Secondary (Age 14-19) Online Information	UK	BSI (www.bsieducation.org)	BSI's Education Programme	- Topics areas: Alternative energy, Applied science , Bicycles, Bridges and tunnels, Buildings and services, Childcare , Designing for the disabled, Electronics , Toys, Quality and business, Product tests, Comparative tests, et al	Research Annex D9
11	F3) Undergraduate	Canada	UL Canada http://www.ulc.ca/SERVICES/TRAINING.asp	Partners in Education	Under development	Survey
12	F3) Undergraduate	China	China Jiliang University	CJLU-SQM program for bachelor's degree	2003~present 7 courses (16-54 hours per course, practice) Most Intensive undergraduate Program	Research AnnexD10
13	F4) Graduate (Ma)	China	China Jiliang University	CJLU MEE and TTMM course for Master's degree	3 courses (28 or 36hrs per course)	Research AnnexD11
14	F4) Graduate	China	Huazhong university of Science and Technology	Graduate course on standardization and quality control	-	Survey
15	F3) Undergraduate	China	Nanjing university of agriculture	Standards Education project on agriculture and foods	-	Survey
16	F4) Graduate	China	Zhongnan university of economics and law	Graduate course on standardization management	-	Survey

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
17	F4) Graduate (Ma) - Textbook	EC(EU)	Helmut Schmidt-University, and other Partners (www.hsu-hh.de/ilias)	EU-Asia Link - Standardization in companies and markets	Development a Text and curriculum E-earning Platform (ILIAS)	Research AnnexD12
18	F4) graduate (Ma/Doc)	Egypt	Productivity and Quality Institute (PQI)	PQI's programmes for post graduate degrees (PQI's programme)	Focusing on quality, conformity assessment	Research AnnexD13
19	F4) Graduate (Ma)	France	University of Technology of Compiegne	Master's degree in quality management (MQ) Master's Programme NQCE(Normalization, qualite, certification et essays)	NQCE: 12 months (+ 6 months work experience) MQ: 9 months (+ 4 months work experience) A few optional courses are available	Research AnnexD14
20	F4) Graduate (Ma) (Engineer, Competitive Intelligence)	France	ZFIB Conseil (www.zfib.com)	Standardization as a tool for Competitive Intelligence	20 hours plus several industry testimonies (First year for this education- will be far more important next year)	Survey AnnexD15
21	F4) Graduate (Ma) (Open System Engineering))	France	ZFIB Conseil (www.zfib.com)	Standardization as a tool for Openness	30 hours accompanying the technical course	Survey AnnexD16
22	F3) Undergraduate	Indonesia	BSN (www.bsn.or.id)	Development of curriculum for education on standardization	General lecture, Under Development	Survey
23	F3) Undergraduate F4) Graduate	ISO	ISO DEVCO	Development Manual 4 - Teaching of standardization on institutions of higher learning	Textbook Two syllabuses are available	Research AnnexD17
24	F4) Graduate	Japan	JSA (http://www.jsa.or.jp)	Standardization for business solution	18 hours during one quarter	Survey AnnexD18

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
25	F4) Graduate	Japan	Tokyo University	Graduate school of Technology Management (MOT)	2005- present 50 students per year – 1/5 interested in standards Some elective courses	Research AnnexD19
26	F3) Undergraduate	Korea	KSA (www.ksa.or.kr)	KSA-Far East University Standardization Program "Global Standards Strategy" (for Computer Engineering Students)	8 courses 1 course per semester 36hours per course (4 courses operating, 4 planned)	Survey AnnexD20
27	F3) Undergraduate	Korea	KSA (www.ksa.or.kr)	University Education Program on Standardization(UEPS)	One semester (32-48 H)	Surv#y AnnexD21
28	F3) Undergraduate - Elective(optional)	Netherlands	RSM Erasmus University	Business Administration - Standardization Strategy	If choose, around 500 hours Students can write bachelor thesis about standardization	Survey AnnexD22
29	F4) Graduate (Ma) - Elective(optional)	Netherlands	RSM Erasmus University	Standardization Management, et al	Standardization Management (2008) - 8weeks Some parts dealt in business process excellence, innovation in service	Survey AnnexD23
30	F4) Graduate (MBA)	Sri Lanka	University of Moratuwa (www.mrt.ac.lk)	MBA in Management of Technology / Quality Management & Standardization	One course (48-56 H)	Survey AnnexD24
31	F3) Undergraduate F4) Graduate	UK	BSI (www.bsieducation.org)	BSI's Education Programme	Online Information - Standards and your course - Standards working with education - Standards in action (Teaching Materials and relevant papers are available online)	Research AnnexD25
32	F3) Undergraduate	USA	ANSI	University Outreach Program		Research
33	F3), F4) Online Information	USA	ASTM International	ASTM Campus/Year of the Student	Website and learning modules	Survey

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
34	F4) Graduate	USA	Catholic University of America (http://webct.cua.edu/public/engr510/index.html)	School of Engineering - Engineering Management Program	Graduate engineering and law students 2 credits 1999-2003	S/Research AnnexD26
35	F3) Undergraduate (partly related)	USA	Faulkner University (www.faulkner.edu)	CS Department Courses, especially Information Design/Evaluation; Web Page Usability and Interface Design courses.	As part of course overview on ISO and ANSI standards	Survey AnnexD27
36 F5	F3) Undergraduate	USA	UL University (www.uluniversity.us)	Safety Compliance Engineer	Under development Expecting to begin delivering this course in 2009. Electrical\Mechanical Engineer Undergraduate Students	Survey
37	F5) Others - Teachers/Educators	Malaysia	Malaysian Association of Standard Users (www.standardusers.org)	Training – Awareness for Teaching Professionals on Importance of Standards for Safety of Consumers	1 day	Survey AnnexD28
38	P4) Committee member P7) Standards Bodies	Australia	Standards Australia	Training Seminar on Standards and Technical Regulation for Gulf Standards Organization's (GSO) Staff and Committee Members	1 week	Survey AnnexD29
39	P7) Staff in NSBs, SDOs, Laboratories	Australia	Standards Australia/ Standards New Zealand	Standardization training	1 week	Survey AnnexD30
40	P3) Gov officials P4) Committee member P5) Chair/Secretariat	Brunei	CPRU (ww.mod.gov.bn/cpru)	Training on Standards development/ International Standardization …	2 workshops in 2006 - completed	Survey AnnexD31

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
41	P4) Committee member	Canada	SCC (http://www.scc.ca/en/participate/training/index.shtml)	Build a Better Understanding of the International Organization for Standardization (ISO)	1 day	Survey AnnexD32
42	P4) Committee member	Canada	SCC	Build a Better Understanding of the International Electrotechnical Commission (IEC)	1 day	Survey AnnexD33
43	P4) Committee member	Canada	SCC	Discover the Standards Council of Canada	1 day	Survey AnnexD34
44	P1) Biz/Org Manager P2) Biz/Org Staff P3) Gov officials	China	SAC	Training course on enterprises participating in international standardization activities	1 day Textbook: Course on the international standardization Textbook: Guide book on Enterprises participating in international standardization activities	Survey
45	P4) Committee member P2) Biz/Org Staff	China	SAC www.sac.gov.cn	Training course on International standardization knowledge	2 days Textbook: Course on the international standardization Textbook: Guide book on Enterprises participating in international standardization activities	Survey AnnexD35
46	P6) Multi/unspecified	Hong Kong	HKSARG	Materials Science and Technology in Engineering Conference - Session on "Standards Development International Practice and Hong Kong Perspective"		Survey AnnexD36
47	P6) Multi/Unspecified P7) Laboratory staff	Indonesia	BSN (www.bsn.or.id)	Training and education of standardization	1 -3 days	Survey

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
48	P7) ISO NSB Staff P4) Committee member Online course	ISO	ISO CS	ISO eLearning Program - Expert in International Standardization Management : Welcome to Southistan	eLearning Program for ISO Member Bodies Learning by Doing (Simulating; Story) approach Three Modules - Assessing priorities for standardization - Managing participation in international standardization - Implementing international standards	Research AnnexD37
49	P7) ISO NSB Staff P4) Committee member	ISO	ISO CS (http://www.iso.org/iso/about/training_at_iso.htm)	ISO Training Services in Standards Development	All matters addressed in ISO/IEC Directives Part 1, and the ISO supplement to the Directives	Research FS#38
50	P6) Multi/unspecified	Korea	KSA (www.ksa.or.kr)	KSA Standardization Courses - Type1: Introduction and Basics	2days	Research AnnexD39
51	P6) Multi/unspecified	Korea	KSA (www.ksa.or.kr)	KSA Standardization Courses - Type2: International Practices	2days	Research AnnexD40
52	P6) Multi/unspecified	Korea	KSA (www.ksa.or.kr)	KSA Standardization Courses - Type3: English Communication	2~3days	Research AnnexD41
53	P6) Multi/unspecified	Korea	KSA (www.ksa.or.kr)	KSA Standardization Courses Type4: Writing Standards	2days	Research AnnexD42
54	P6) Multi/unspecified	Korea	TTA (www.tta.or.kr)	IT International Standardization Course	2 days	Survey AnnexD43
55	P8) Other - vocational education	Netherlands	Hogeschool van Amsterdam		80 hours Book Standard of maatwerk, Lectures, Exam, Group assignment, presentations	Research
56	P6) Multi/unspecified	Philippines	BPS (www.bps.dti.gov.ph)	Standards Blitz – "Konsyumer Atbp." (KATBP) Radio Program		Survey

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
57	P6) Multi/Unspecified P8) other - consumer	Philippines	BPS (www.bps.dti.gov.ph)	Standards Blitz – Standards Advocacy Club		Survey
58	P1) Biz/Org Manager P2) Biz/Org Staff	Singapore	SPRING(www.standards.org.sg)	Educational Training Courses on technical standards	1 day	Survey
59	P1) Biz/Org Manager P2) Biz/Org Staff P3) Gov officials	Singapore	SPRING(www.standards.org.sg)	Seminar launches of new standards	0.5 day	Survey AnnexD44
60	P1) Biz/Org Manager	Taipei	National Information Infrastructure Enterprise Promotion Association (http://www.standards.org.tw/edu.asp)	Application of standards for businesses	Medium-level executives of interested parties Handouts for fundamentals of standardization and case studies	Survey AnnexD45
61	P2) Biz/Org Staff	Taipei Chinese	Advance Data Technology, LTD.（www.adt.com.tw）	Seminar on Low Power Radio Frequency Device Type Approval Procedures	1 day	Survey
62	P2) Biz/Org Staff	Taipei Chinese	Advance Data Technology, LTD.（www.adt.com.tw）	Seminar on Telecommunication Terminal Equipment Type Approval Procedures	1 day	Survey
63	P2) Biz/Org Staff	Taipei Chinese	Electronics Testing Center, Taiwan (www.etc.org.tw）	2007 Seminar on optimal policy and trend about EU Directives （WEEE, RoHS and EuP）	5 classes: half day each	Survey

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
64	P2) Biz/Org Staff	Taipei Chinese	TAF （service.tafw.org.tw）	Calibration Laboratory Director Training	2 days	Survey
65	P2) Biz/Org Staff	Taipei Chinese	TAF （service.tafw.org.tw）	Testing Laboratory Director Training	2 days	Survey AnnexD46
66	P2) Biz/Org Staff	Taipei Chinese	Telecommunication Laboratories Chunghwa Telecom Co.,Ltd. （www.chttl.co.tw）	Telecommunication Technology Seminar 2007	2 days	Survey
67	P3) Gov officials (Local)	Thailand	TISI (www.tisi.go.th)	The Project in Promotion of Industrial Standards, Enhancement of Quality of Life, Protection of Consumers' Right	Various activities	Survey AnnexD47
68	P1) Biz/Org Manager P2) Biz/Org Staff	Thailand	TISI (www.tisi.go.th)	The Project on Increasing Manufacturers' Capacity of Production and Management System to International Standards Level	Training	Survey AnnexD48
69	P4) Committee member	UK	BSI	BSI committee member training course 01	An introduction to the standardization process	Research AnnexD49
70	P4) Committee member	UK	BSI	BSI committee member training course 02	Drafting standards	Research AnnexD50
71	P4) Committee member	UK	BSI	BSI committee member training course 03	IEC and CENELEC today	Research AnnexD51
72	P4) Committee member	UK	BSI	BSI committee member training course 04	Legal aspects of standards	Research AnnexD52
73	P4) Committee member	UK	BSI	BSI committee member training course 05	Understanding European (CEN) procedures	Research AnnexD53

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
74	P4) Committee member	UK	BSI	BSI committee member training course 06	Understanding international (ISO) procedures	Research AnnexD54
75	P4) Committee member	UK	BSI	BSI committee member training course 07	Working across cultures	Research AnnexD55
76	P4) Committee member	UK	BSI	BSI committee member training course 08	Awareness of environmental aspects in standardization	Research AnnexD56
77	P5) Committee member	UK	BSI	BSI committee member training course 09	Chairing meetings	Research AnnexD57
78	P4) Committee member	UK	BSI	BSI committee member training course 10	ISO Templates and Meetings	Research AnnexD58
79	P4) Committee member	UK	BSI	BSI committee member training course 11	Influencing and persuading in the standardization environment	Research AnnexD59
80	P4) Committee member	UK	BSI	BSI member training via eLearning	BSI E-learning	Research AnnexD60
81	P6) Multi/unspecified	USA	A2LA www.a2la.org	Quality in the Laboratory Training Series	Various Length Courses	Survey AnnexD61 4 sheets
82	P7) SDO staff	USA	ANSI	ANSI Training Course No. 205	ISO Secretariat Operations: Taking the Secret out of the Secretariat	Research AnnexD62
83	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 208	The Operating Procedures of U.S. TAGs to ISO: Strengthening the U.S. Voice in International Standardization	Research AnnexD63
84	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 209	Effective Business/Industry Participation in Standards Development: Strategies for Success	Research AnnexD64
85	P5) Committee member	USA	ANSI	ANSI Training Course No. 210	Development of ISO and IEC Standards: Working Together	Research AnnexD65
86	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 211	Leadership Training: Managing Standards Activities Effectively	Research AnnexD66
87	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 284	From Delegate to Diplomat: Representing the United States in International Standards Activities	Research AnnexD67
88	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 287	The American Way: The American National Standard(ANS) Development Process	Research AnnexD68

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
89	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 301	Making the Most of the Public-Private Partnership in Standards	Research AnnexD69
90	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 306	Strategic Standardization Management Briefing	Research AnnexD70
91	P6) Multi/unspecified	USA	ANSI	ANSI Training Course No. 627	Personnel Certification Accreditation Workshop: Understanding the Requirements of ANSI/ISO/IEC 17024 - General requirements for bodies operating certification schemes for persons	Research AnnexD71
92	P6) Multi/unspecified Online course	USA	ANSI (www.standardslearn.org)	eLearning 1 - Why Standards Matter	A general introduction to standards and conformity assessment activities	Research AnnexD72
93	P6) Multi/unspecified Online course	USA	ANSI (www.standardslearn.org)	eLearning 2 - Short Course: Legal Issues in Standard-Settings	A Simple Review of Antitrust Laws and Patent Policies	Research AnnexD73
94	P6) Multi/unspecified Online course	USA	ANSI (www.standardslearn.org)	eLearning 3 - Short Course: Through History with Standards	A quick overview to demonstrate how standards have evolved over time	Research AnnexD74
95	P6) Multi/unspecified Online course	USA	ANSI (www.standardslearn.org)	eLearning 4 - U.S. Standards System – Today and Tomorrow	A spotlight on the U.S. national standards system	Research AnnexD75
96	P1), P2), P3)	USA	ASTM International	Various orientation programs	On-demand downloadable tutorials	Survey
97	P6) Multi/unspecified Online course	USA	Intellectual Property Shield (www.ip-shield.com)	Copyright Aware™ Online certification courseware with testing designed for anyone who develops or consumes copyrighted content.	1-1.5 hrs Online	Survey AnnexD76
98	P6) Multi/unspecified	USA	UL University (www.uluniversity.us)	Competency Based Skills for Authorities Having Jurisdiction	Various relevant workshops	Survey

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
99	P1) Biz/Org Manager P2) Biz/Org Staff	USA	UL University (www.uluniversity.us)	Private Workshops Focused on International Compliance	Various relevant workshops	Survey AnnexD77
100	P3) Gov officials P4) Committee member P5) Chair/Secretariat	USA	UL University (www.uluniversity.us)	Private Workshops Focused on US Standards and Conformity Assessment System	Various relevant workshops	Survey AnnexD78
101	P6) Multi/unspecified	USA	UL University (www.uluniversity.us)	Standards Based Education		Survey AnnexD79
102	P2) Biz/Org Staff P3) Gov officials	Vietnam	Training Centre (QTC)	Awareness Training on Standardization and Technical Regulating; Law on Standards and Technical Regulations. (short-term training courses)	Government offices like General department for Tourism, Local Governments of province Nghe An, Ba Ria-Vung Tau, Bac Ninh….,; SMEs in Northern and Southern Viet Nam; Directors/Executives of Local Departments of Standards, Metrology and Quality; New staffs of STAMEQ, etc.	Survey AnnexD80
103	G) General Case Study and Curriculum	APEC	SCSC (Sub-Committee on Standards and Conformance)	Strategic Standards and Conformance Education Project – Phase I – Case Studies and Curricula Development	This guideline is the outcome of this project. This is the 1st phase of APEC project CTI 21/2007T to identify current status and needs in education about standards and conformance and develop model curriculum.	Research AnnexD81
104	G) General Textbook development	APEC	SCSC (Submitted on Standards and Conformance)	Strategic Standards and Conformance Education Project – Phase II – Textbook Development	This project is the second phase of APEC project about education to develop basic textbook and teaching manual for higher education. (March 2008 to October 2009)	Research AnnexD82

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
105	G) General	ASEM	SCA (Standards and Conformity Assessment) www.asemsca.org	Regular discussion	Regularly exchange information and experiences in ASEM SCA meeting.	Research
106	G) General	CEN	CEN, CENELEC, ETSI, W3C, The Open Group, ICT Standards Board in Europe (www.copras.org)	COPRAS	The COPRAS website is providing education-like information about ICT standards-making to European Union-supported research projects Questionnaires, direct contact with projects, brochures, web site, e-mails, presentations in conferences	Survey AnnexD83
107	G) General	EURAS	www.euras.org	European Academy for Standardization	EURAS wants to help change this situation and supports the development of standardization curricula by providing a platform and opportunities for the discussion, development and exchange of teaching material.	Research
108	G) General	ICES	International Committee on Education about Standardization (www.standards-education.org)	International Committee on Education about Standardization	The first international forum about standardization education. First meeting was held in Tokyo, 20056, Second in Delft, 2007, and Third to be in Washington 2008	Research
109	G) General Online Information	IEC	IEC (www.iec.ch/academia)	IEC and Academia - IEC Lecture Series I	Online/CD distribution IEC Lecture series I (2005) 1) The Strategic Value of International Standards 2) The International Electrotechnical Commission	Research AnnexD84

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
110	G) General Online Information	IEC	IEC (www.iec.ch/academia)	IEC and Academia - IEC Lecture Series II	Online/CD distribution IEC Lecture series II (2007) 1) Lecture 1: Introduction to Standards 2) Lecture 2: Life Cycle of Standards 3) Lecture 3: The Economic Value of Standards	Research AnnexD85
111	G) General Online Information	IEC	IEC (www.iec.ch/academia)	IEC and Academia - online services	Provision of recently published academic papers Provision of Presentations about standardization Provision of Sample Standard & Working Document	Research
112	G) General Paper Contest	IEC	IEC (www.iec.ch/academia)	IEC and Academia - IEC Challenge	This initiative is intended to offer the world's academic institutions a challenge of the highest order. Some of the submitted papers were selected and published with the title of 'International Standardization as a Strategic Tool - IEC Centenary Challenge'	Research
113	G) General	IFAN	www.ifan.org	IFAN WG16 Education and training	• To support and promote initiatives in education and training in the standardisation field at international, regional and national levels; • To observe initiatives and inform the communities concerned by standardisation (stakeholders, users, education professionals, experts, etc.) on education and training in the standardisation field at international, regional and national levels; • To support, facilitate and encourage networking in this field.	Research
114	G) General education award	ISO	ISO CS	ISO award for Higher Education in Standardization	ISO created this award to encourage and recognize successful programs in higher education on standardization.	Research

No	Target groups	Economy Org.	Operator (website)	Title	Note	Method F.Sheet#
115	G) General	ISO	ISO CS (http://www.iso.org/iso/en/commcentre/isomemory/startpage.html)	isomemory (online game)	Easy and Fun online puzzle game to learn various ISO standards	Research AnnexD86
116	G) General	ITU	ITU (http://www.itu.int/ITU-T/uni/)	Cooperation between ITU-T and Universities	Regular Consultation Meetings Online Information Exchange	Research
117	G) General	SES	Standards Engineering Society (www.ses-standards.org)	SES Certification Program (Standards Professionals)	Standards Engineering Society (SES) has established a certification program to recognize persons who have demonstrated a high degree of professional competence in different areas of standards.	Research AnnexD87
118	G) General	UNECE	UNECE WP6 (*http://www.unece.org/trade/wp6/welcome.htm)*	UNECE Recommendation "I" Methodological studies and education	(first version adopted in 1970)	Research AnnexD88

Annex D

Detailed Fact Sheets of
88 Standards Education Practices

<Annex D1 to D9>

Detailed Fact Sheets for
for Primary/Secondary Education Practices

D1. Japan – METI - Standards Education Delivery Service (Annex.B #1)

Title **(weblink)**	Standards Education Delivery Service (Lectures on Demand) (http://www.jsa.or.jp/lectures/default.asp)	
Operator **(website)**	METI (Ministry of Trade, Economy and Industry) (http://www.meti.go.jp/) JSA (Japanese Standards Association) (http://www.jsa.or.jp)	
Type **(Target Groups)**	F1, F2 This program target elementary school, secondary school, high school and technical college students.	
Learning **Objectives**	In this program, the audience (students) learn : ✓ How standards used in daily life ✓ What type of standards is effective for social life ✓ Why standardization is important in our society	
Year **(with number of participants)**	✓ 2006 (1,351 students in 25 schools; 4 elementary schools, 4 secondary schools, 12 high schools and 5 technical colleges)	
Operation Summary	✓ Term; Sep. 2006 – Feb. 2007 ✓ Hours; 45-100 minutes/school (In case of elementary school and secondary school, one class is 45-50 minutes/school. 90-100 minutes classes were provided for high schools and technical colleges) ✓ Teachers; METI official staffs, JSA official staffs, Specialist from Private Manufactures ✓ Text book; power point files basically made by METI staffs	
Textbook Summary **(if applicable)**	Title	Standards Education Class *(language : Japanese)*
	Authors, Publisher, Year	Not published (power point files)

	Table of contents	<Elementary school> Ch1. Examples of standardization in daily life Ch2. Function of Standard Ch3. Communication using picture writing <Secondary school> Ch1. Over view of standards and standardization Ch2. Examples of standardized things and not standardized things Ch3. Standardization in future <High school and Technical school> Ch1. Overview of standards Ch2. Japanese standards (JIS, JAS et al.) Ch3. Importance of standardization Ch4. Importance of international standardization Ch5. International standardization activities in each countries Ch6. Main points of standardization
	Weblink	Not available

**** Submitted by (please contact following person for further information):***

Economy	Japan
Org/Ministry	Ministry of Economy, Trade and Industry
Position	Sector Chief
Name	Akiko Kawai
Phone, Email	+81-3-3501-9471, kawai-akiko@meti.go.jp

D2. Korea - KSA – Standards Olympiad (Annex.B #2)

Title	KSA – Standards Olympiad
Operator (website)	KSA (Korean Standards Association) (website: www.ksa.or.kr)
Type (Target Groups)	F1. Primary School F2. Lower Secondary School
Learning Objectives	In this program, the audience (students) learn : ✓ Importance of standardization ✓ How standards solve problems or improve efficiency
Year (with number of participants)	2006 – Initiated as a 'Students Camp' Program 2007 – Changed to 'Standards Olympiad' Program
Operation Summary	Advertisement ✧ Online Advertising in KSA and KOFETS website ✧ Poster Advertising for all primary and lower secondary schools One hundred teams to be selected for Competition ✧ A task for the olympiad to be posted online for open competition ✧ Any students can apply for the olympiad with a few pages of idea proposal on the task for preliminary competition ✧ An evaluation committee will select 100 Teams (300 students – 3 students/team) for main competition ✧ Main competition will be for three days with the selected 100 teams Awards ✧ Awards to be given six teams for primary school students and 10 teams for lower secondary school students. The awards will be given under the name of Minister of MOCIE and presidents of KSA and KOFETS

	 <Opening Ceremony>  <Competition Task>		
Textbook Summary (if applicable)	Title *(language)*	*N/A*	
	Authors, Publisher, Year	Mr. Kang, Ey Goo and 4 co-authors Far East University Press, 2007	
	Table of contents		
	Weblink	Not available	

**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Researcher
Name	Mr Channy Lee
Phone, Email	+82-2-16-317-3579, channy@ksa.or.kr

D3. Philippines - Standards Blitz – Secondary Education (Annex.B #4)

Title **(weblink)**	Standards Blitz – Standards in the Curricula of Secondary and Alternative Learning Education	
Operator **(website)**	BPS (www.bps.dti.gov.ph)	
Type **(Target Groups)**	a. F2 - Secondary School teachers and students b. F2 - Mobile teachers and instructors: secondary level c. F2 - Mobile learners: secondary level	
Learning Objectives	In this program, the audience (students) learn : ✓ the concepts and significance of standards and conformity assessment; ✓ the quality and safety marks (Philippine Standard and Import Commodity Clearance – PS & ICC – marks) on critical products; ✓ the standards advocacy programs made available to them; and ✓ their rights and responsibilities as vigilant consumers.	
FOR ALTERNATIVE LEARNING EDUCATION PARTICIPANTS		
Year **(with number of participants)**	✓ 2006 – 20 curriculum specialists ; 24 instructional managers; 18 industry specialists ; 140 mobile learners ✓ 2007 – 8 curriculum specialists ; 44 instructional managers and mobile teachers	
Operation Summary	✓ Developed 12 draft modules on 12 products under the BPS mandatory certification ✓ Prioritized four (4) critical products ✓ Finalized four (4) modules on these four (4) products ✓ Trained instructional managers and mobile teachers on the proper use of the modules on standards for mobile learners	
Textbook(Syllabus) or Curriculum Summary	(1) Title of Module:	*Magic ng Bateriyang Pangsasakyan*
	Product :	Automotive / Lead Acid Storage Battery
	Language :	Filipino
	Authors,	Department of Trade and Industry – Bureau of

	Publisher, Year	Product Standards Department of Education – Bureau of Alternative Learning System Philippine Product Safety and Quality Foundation, Inc.
	Table of contents (curriculum or Syllabus)	• Introduction, Messages, Abstract, Objectives, Pre-Test • Lesson 1 – Quality of Battery: Objectives, Concepts, Insights, Story, PS Certification Scheme, Proper markings on battery based on the Philippine National Standard, Exercises, Summary • Lesson 2 – Proper Use and Disposal of Battery : Objectives, Concepts, Insights, Symbols of Battery Safety, Exercises, Recycling Loop, Proper Disposal, Exercises • Consumer Rights and Responsibilities • Summary • Module Test • Answers to Exercises • Glossary • References
	Weblink	
Textbook(Syllabus) or Curriculum Summary	(2) Title of Module:	*Ilaw ng Ating Buhay*
	Product :	Compact Fluorescent Lamp
	Language :	Filipino
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Alternative Learning System Philippine Product Safety and Quality Foundation, Inc.

Textbook(Syllabus) or Curriculum Summary	(3) Title of Module:	*Salamin ! Salamin ! Sino ang Salarin ?*
	Product :	Flat glass
	Language :	Filipino
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Alternative Learning System Philippine Product Safety and Quality Foundation, Inc.
Textbook(Syllabus) or Curriculum Summary	(4) Title of Module:	*Tangke ng LPG : Tiyaking Ligtas ! Puwede Ba?*
	Product :	LPG cylinder
	Language :	Filipino
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Alternative Learning System Philippine Product Safety and Quality Foundation, Inc.
FOR SECONDARY EDUCATION PARTICIPANTS		
Year (with number of participants)	✓ 2006 – 16 curriculum specialists ✓ 2007 – 42 teachers ; 18 industry specialists ; 508 mobile learners	
Operation Summary	✓ Developed 25 draft lesson plans on 8 products under the BPS mandatory certification ✓ Prioritized four (4) critical products ✓ Finalized seven (7) Lesson Plans on these four (4) products	
Textbook(Syllabus) or Curriculum Summary	(1) Title of Lesson Plan :	Reflection of Light
	Product :	Flat glass
	Language :	English
	Subject and Year Level :	Science & Technology IV

	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Secondary Education Philippine Product Safety and Quality Foundation, Inc.
	Table of contents (curriculum or Syllabus)	• Lesson Plan – Core Message, Learning Competency, Objectives, Prior Knowledge and Skills, Subject Matter, Strategies, Evaluation • Activity Sheet – Purpose, Materials, Set-up, Procedure, Questions • Teacher's Notes – Core Message, Learning Competency, Target Students, Topic, Science Concepts, Answers to Questions, Suggested Student Projects
	Weblink	
Textbook(Syllabus) or Curriculum Summary	(2) Title of Lesson Plan :	Reflection of Light
	Product :	Flat glass
	Language :	English
	Subject and Year Level :	Science & Technology IV
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Secondary Education Philippine Product Safety and Quality Foundation, Inc.
Textbook(Syllabus) or Curriculum Summary	(3) Title of Lesson Plan :	Electrochemical cells
	Product :	Automotive battery
	Language :	English
	Subject and Year Level :	Science & Technology IV
	Authors,	Department of Trade and Industry – Bureau of

	Publisher, Year	Product Standards Department of Education – Bureau of Secondary Education Philippine Product Safety and Quality Foundation, Inc.
Textbook(Syllabus) or Curriculum Summary	(4) Title of Lesson Plan :	Gay Lussac's Law
	Product :	LPG cylinder
	Language :	English
	Subject and Year Level :	Chemistry III
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Secondary Education Philippine Product Safety and Quality Foundation, Inc.
Textbook(Syllabus) or Curriculum Summary	(5) Title of Lesson Plan :	Uses of Chemistry to Daily Life
	Product :	Compact fluorescent lamp
	Language :	English
	Subject and Year Level :	Chemistry III
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Secondary Education Philippine Product Safety and Quality Foundation, Inc.
Textbook(Syllabus) or Curriculum Summary	(6) Title of Lesson Plan :	You Light Up My Life
	Product :	Compact fluorescent lamp
	Language :	English
	Subject and Year Level :	Industrial Arts – Electricity III
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards

		Department of Education – Bureau of Secondary Education Philippine Product Safety and Quality Foundation, Inc.
Textbook(Syllabus) or Curriculum Summary	(7) Title of Lesson Plan :	Illumination
	Product :	Compact fluorescent lamp
	Language :	English
	Subject and Year Level :	Civil Technology IV
	Authors, Publisher, Year	Department of Trade and Industry – Bureau of Product Standards Department of Education – Bureau of Secondary Education Philippine Product Safety and Quality Foundation, Inc.

**** Submitted by (please contact following person for further information):***

Economy	Philippines
Org/Ministry	Department of Trade and Industry – Bureau of Product Standards
Position	Head, Standards Promotions and Media Relations
Name	Ms. Marie Camille B. Castillo
Phone, Email	(632) 751-4740; CamilleCastillo@dti.gov.ph

D4. Philippines – Standards Blitz Writing Contest (Annex.B #5)

Title	Standards Blitz – Standards' Essay Writing Contest
Operator	BPS (www.bps.dti.gov.ph)
Target Groups	F2) Secondary (including teachers)
Learning Objectives	✓ Carefully review responsibilities and techniques for effective participation in standards development activities. ✓ Learn how to promote and protect your organization's interests through effective participation in standards development work.
Operation Summary	2006 a. Memorandum Circular on the contest for schools to submit their contestant b. List of contestants and their teacher-chaperones c. Orientation of the contestants and their teacher-chaperones d. Contest proper based on the ISO's theme of the WSD celebration e. Judging of entries g. Awarding of three (3) Winners f. Exhibition of entries

**** Submitted by (please contact following person for further information):***

Economy	Philippines
Org/Ministry	Department of Trade and Industry – Bureau of Product Standards
Position	Head, Standards Promotions and Media Relations
Name	Ms. Marie Camille B. Castillo
Phone, Email	(632) 751-4740; CamilleCastillo@dti.gov.ph

D5. Thailand – Integrating Standardization in Education (Annex.B #6)

Title 1	The Project on Integrating Standardization in Education	
Operator (website)	Thai Industrial Standards Institute (website: www.tisi.go.th)	
Type (Target Groups)	F2 Secondary School (Teachers & students)	
Learning Objectives	✓ To give teachers knowledge and understanding of standardization to educate their students ✓ To raise students' awareness of the importance of standardization to apply to their daily lives ✓ To use students as a center to promote standardization	
Year (with number of participants)	✓ 2003 (610 teachers in 595 schools) ✓ 2004 (693 teachers in 680 schools) ✓ 2005 (622 teachers in 620 schools) ✓ 2006 (389 teachers in 307 schools)	
Operation Summary	✓ Development of training courses for integrating standardization in living, occupation and technology ✓ Preparation of manuals for teachers & students and training materials ✓ Training of selected teachers ✓ Supervision of the trained teachers ✓ Exhibitions and recreations had been organized in schools around the country ✓ Several contests had been launched i.e. painting, costume, slogan model of industrial products	
Textbook(Syllabus) or Curriculum Summary	Title	Manual for Integrating Standardization in living, occupation and Technology *(language : Thai)*
	Authors, Publisher, Year	Educational supervisors, teachers, TISI 2003-2006

	Table of contents (curriculum or Syllabus)	Unit I Standardization Unit II Integration of standardization into education Unit III Learning design Unit IV Technological process to develop a project for living and occupation
	Weblink	Not available

**** Submitted by (please contact following person for further information):***

Economy	Thailand
Org/Ministry	Standardization Promotion and Development Division Thai Industrial Standards Institute (TISI) Ministry of Industry
Position	Director
Name	Ms. Chaowalee Ratanamungmeka
Phone, Email	(66 2) 202 3427 chaowlee@tisi.go.th

D6. Turkey - TSE Textbook for Secondary School (Annex.B #7)

Title (website)	Textbook of Standardization and Quality for Turkish secondary schools	
Operator (website)	TSE(Trukish Standards Institution) and Secondary Schools (www.tse.org.tr)	
Type (Target Groups)	F2) Secondary Schools	
Learning Objectives	✓ To learn basics about standardization and quality	
Year	✓ N/A	
Operation Summary		
Textbook(Syllabus) or Curriculum Summary	Title:	Standardization and Quality (in Turkish)
	Authors, Publisher, Year	TSE, 2003
	Table of contents (curriculum or Syllabus)	Chapter 1 Notions of Quality Chapter 2 Quality Control Chapter 3 Control of Resources Chapter 4 Control of Manufacturers Chapter 5 Quality Control related to Management Chapter 6 Methods of Quality Control Chapter 7 Notions of Standards Chapter 8 Classification of Standards Chapter 9 Relevance of Standards and Production

		
	Weblink	

**** Researched and Prepared by the Project Editor***

**** Mr. Alpay E IGREK kindly provided the Textbook via mail to the Editor.***

**** (Please contact following person for further information):***

Economy	Turkey
Org/Ministry	TÜRK STANDARDLARI ENSTİTÜSÜ Necatibey Cad. No:112, 06100 Bakanlıklar, Ankara/Türkiye
Position	Director
Name	Mr. Alpay E. IGREK
Phone, Email	Tel : + 90 (312) 416 6280 - 416 6620, Fax: + 90 (312) 416 6232 e-mail: aigrek@tse.org.tr, Web: www.tse.org.tr

D7. UK-BSI'S Online Education Information (Age 7-11) (Annex.B #8)

Title **(weblink)**	BSI'S Education Programme (Age 7-11) (weblink: www. Bsieducation.org)	
Operator **(website)**	BSI (www.bsi-global.com)	
Type **(Target Groups)**	F1 Primary School (Age 7-11)	
Learning Objectives	BSI raises awareness about important standards	
Year **(with number of participants)**		
Operation Summary		
Textbook(Syllabus) or Curriculum Summary	Title	Age 7-11
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**Bridges and tunnels** There are many different designs of bridges built for specific purposes. Bridges have to maintain Standards by fulfilling design, function and safety in construction. **Food packaging** Packaging exists in many different forms for many different purposes. Thinking about the content of a package helps determine what the packaging should be. All types of packaging need to reach certain Standards for safety and suitability. **Shoes** Many different types of shoes exist from Wellington boots to ballet shoes. All are deigned for a particular purpose and are suitable for different users. Many areas of shoe design, such as appearance and safety, require Standards to be applied to them. **Sustainability** There is a lot we can to do to provide for our needs without damaging resources and the environment. Standards can help up when planning an event large

		or small, such as the Olympics or just a birthday party. ***Online Game: Bridge Builder game**
	Weblink	http://www.bsieducation.org/Education/7-11/default.shtml

**** Researched and Prepared by the Project Editor***

**** Based on BSI website and information provided by Kim Edmondson (BSI)***

**** (Please contact following person for further information):***

Economy	UK
Org/Ministry	BSI Group Headquarters, 389 Chiswick High Road, London, W4 4AL, UK
Position	Education Executive
Name	Kim Edmondson
Phone, Email	T: +44 (0)20 8996 7534, F: +44 (0)20 8996 7091 E: kim.edmondson@bsigroup.com, www.bsieducation.com

D8. UK-BSI'S Online Education Information (Age 11-14) (Annex.B #9)

Title (weblink)	BSI'S Education Programme (Age 11-14) (weblink: www. Bsieducation.org)	
Operator (website)	BSI (www.bsi-global.com)	
Type(Target Groups)	F2 Primary School (Age 11-14)	
Operation Summary	Online Information	
Textbook(Syllabus) or Curriculum Summary	Title	Age 11-14
	Authors	Online
	Table of contents (curriculum or Syllabus)	**Bridges and tunnels** Structures are all around us and exist in many different forms. Designing and building a bridge involves using Standards to assess safety, stability and security. **Food packaging** Many Standards need to be met to ensure food packaging keeps a product safe and fresh. This can be as varied as colour fastness of the packaging to assessment of odour. **Playgrounds** Lots of fun equipment is used in playgrounds. The design of the equipment minimises the risk of hazards occurring. Examples are equipment being made of smooth plastic and with no high platforms you could fall off. Standards have to be met to ensure playgrounds are safe and well-designed. **Sustainability** Providing for the needs of the world's current population without damaging our environment is an important task. Standards can help us to manage large international events sustainably. **Textiles** Textile materials are only chosen after the physical properties have been explored and evaluated in the same way as plastic or metal. Testing textile materials is key to making sure they meet Standards.
	Weblink	http://www.bsieducation.org/Education/11-14/default.shtml

**** Researched and Prepared by the Project Editor***

**** Based on BSI website and information provided by Kim Edmondson (BSI)***

D9. UK-BSI'S Online Education Information (Age 14-19) (Annex.B #10)

Title **(weblink)**	BSI's Education Programme (Age 14-19) (weblink: www. Bsieducation.org)	
Operator **(website)**	BSI (www.bsi-global.com)	
Type **(Target Groups)**	F2 Secondary School (Age 14-19)	
Learning Objectives	BSI raises awareness about important standards	
Year **(with number of participants)**		
Operation Summary	Online information	
Textbook(Syllabus) or Curriculum Summary	Title	Age 14-19
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**Alternative Energy** Articles • Alternative energy Design assignment • Design a wind turbine • Design teachers' notes Make assignment Write a production plan and make a prototype of a wind turbine drive unit. • Make Wind Turbine assignment • Make teachers' notes **Applied Science** a topic • Microscopy • Micro-organisms • Qualitative analysis • Quantitative analysis • Electrical properties • Other physical properties • Scientists and Standards **Bicycle**

		Find out more about... • The parts covered by different Standards Design assignment • Design a testing machine to test different parts of your bicycle • Design teachers' notes Make assignment • Write a production plan and make a prototype for a bicycle reflector • Make teachers' notes **Bridges and tunnels** Articles • Bridges and tunnels Design assignment • Design a small bridge • Design teachers' notes **Buildings and services** Articles • Buildings and services Design assignment • Design a new plumbing device • Design teachers' notes **Childcare** Information leaflet • Childcare Standards **Childerns's transport** **Designings for the disabled** These are the main guides that are available through British Standards: **BS 8003:2001** Design of buildings and their approaches to meet the needs of disabled people **BS 7000-6:2005** Design Management Systems is a guide to managing inclusive design.. **BIP 3003:2004** Step through guide to disability access (on CD-ROM) A summary of the standards areas that cover other products and services (not including medical equipment) for the disabled are: *Buildings* • Design of buildings • Fire precautions and access to buildings • Lifts • Hoists and stair lifts • Sanitary appliances (basins, toilets, drinking fountains, hand driers etc) • Escalators and moving walkways • Tactile warning devices for paved surfaces • Smoke alarms for deaf and hard of hearing *Equipment*

		• Hearing aids • Wheelchairs • Walking aids • Beds • Low-vision reading aids • ICT products • Making information accessible on the Internet through sign language • Aircraft ground support equipment **Electronics** Electronic Component Box Make assignment Write a production plan and make a prototype of an electronic component box. • Make electronic component box • Electronic component box teachers' notes Printed circuit board Make assignment Write a production plan and make a prototype for a printed circuit board for an intercom. • Make printed circuit board • Printed circuit board teachers' notes Tests • Electrical resistance • Product tests • Product testing record sheets **Food packaging** Articles • Food packaging Design assignment • Design a new pizza box • Design teachers' notes Make assignment • Write a production plan and make a prototype of a pizza box • Make teachers' notes **Furniture** Find out more about… • Standards for furnishings • Product development for soft furnishings • Product development for garden furniture Tests • Finishes • Joining • Product tests • Product testing record sheets Information leaflets • Design furnishings • Standards for lamps

		Scuba diving Articles • Scuba diving Design assignment • Design a snorkel and a face mask • Design teachers' notes Tests • Thermal properties • Product tests • Product testing record sheets **Surveillance** Articles • Surveillance Design assignment • Design a security light system • Design teachers' notes **Sustainability** There is a choice of three different practical, problem solving challenges which focus on making the society we live in more sustainable. The challenges are: **Challenge 1: Let's Do Lunch** Design a piece of sustainable food packaging that not only keeps your food of choice fresh, but also helps to protect the world's resources. **Challenge 2: The Sustainable School** Design an energy efficient sustainable classroom. **Challenge 3: Mass Transit** Design a new mass transit system that will get people out of their cars and onto public transport. Each challenge is supported by **activities** and detailed **lesson plans** . These can either be downloaded as PDF files for printing or viewed on line as web pages. **Theme parks and playground** Standards for playgrounds • Playground Standards Product development for playground equipment The resources below can be used for Engineering GCSE and Manufacturing GCSE. • Product development Case study • Theme parks and playgrounds Design assignment • Design a rollercoaster for a theme park • Design teachers' notes **Toys** Find out more about… • Standards for toys • Product development for babies' toys • Product development for soft toys

		• Product development for wood, metal or plastic toys • Product development for electronic toys Tests • Product tests • Product testing record sheets Info leaflets • Design or make a toy • Standards related to childcare provision Activity • Designing a new toy **Quality and business** BS EN ISO 9001 is a Standard that UK businesses can adopt for improving quality in all their systems. **BS EN ISO 9000 family of Standards** • A brief history of the BS EN ISO 9000 family of Standards • Introducing the family of ISO 9000:2000 Standards • What are the benefits of the BS EN ISO 9000:2000 series? • How much does registration cost?
	Weblink	http://www.bsieducation.org/Education/14-19/default.shtml

**** Researched and Prepared by the Project Editor***

**** Based on BSI website and information provided by Kim Edmondson (BSI)***

<Annex D10 to D28>

Detailed Fact Sheets for
Higher Education Practices
(Undergraduate and Graduate)

D10. China Jiliang University – SQM (Undergraduate) (Annex.B #12)

<table>
<tr><td>Title</td><td colspan="2">The Higher Education of Standardization in China Jiliang University (CJLU) – SQM bachelor program</td></tr>
<tr><td>Operator</td><td colspan="2">China Jiliang University (CJLU) (http://english.cjlu.edu.cn)</td></tr>
<tr><td>Target Groups</td><td colspan="2">F3) SQM (undergraduate students from standardization and quality management discipline)</td></tr>
<tr><td>Learning Objectives</td><td colspan="2">✓ To work at company standardization jobs.
✓ To serve to the standardization management sectors of the government at different levels.
✓ To serve to the medium servicing organization for standardization.</td></tr>
<tr><td>Operation Summary</td><td colspan="2">✓ China Jiliang University (CJLU, formerly the China Institute of Metrology) is the only university qualified to offer Bachelor and Master degrees in the sectors of Quality Supervision, Inspection and Quarantine in China
✓ Students must take six essential courses and are advised to take one elective course
✓ The students from SQM for bachelor degree have 4 years to get the degrees.
<table>
<tr><td colspan="5">Number of Students in SQM bachelor program</td></tr>
<tr><td>2003</td><td>2004</td><td>2005</td><td>2006</td><td>Total</td></tr>
<tr><td>77</td><td>164</td><td>191</td><td>160</td><td>592</td></tr>
</table></td></tr>
<tr><td rowspan="4">Textbook(Syllabus) or Curriculum Summary</td><td>Title:</td><td>Standardization and Quality Management Discipline (SQM) curriculum</td></tr>
<tr><td>Authors, Publisher, Year</td><td></td></tr>
<tr><td>Table of contents (curriculum or Syllabus)</td><td>1. Standardization Principle (36Hour)
2. International Standardization (36H)
3. WTO TBT and SPS (36H)
4. ISO9000 Family Standards and Quality System Certification (54H)
5. Quality management (54H)
6. Standardization in Companies and Markets (16H) (IlIAS E-Learning Platform - EU-Asian Link Project Outcome)
7. (elective) ISO14000 Standard and Environment Management System Certification (36H)
* Professional Practice of Standardization (4 Weeks)
* Auditor Training for ISO9001 (1 Week)</td></tr>
<tr><td>Weblink</td><td>NA</td></tr>
</table>

**** Prepared by the Project Editor***

****Based on ISO Focus issue in Nov 2007 and ICES 2nd Workshop proceedings***

D11. China Jiliang University – MEE, TTMM (Master) (Annex.B #13)

Title	The Higher Education of Standardization in China Jiliang University (CJLU) – MEE and TTMM programs	
Operator	China Jiliang University (CJLU) (http://english.cjlu.edu.cn)	
Type (Target Groups)	F4) Graduate -Type1: Mechanical and Electronic Engineering(MEE) -Type2: Testing Technology and Measuring Meters(TTMM)	
Learning Objectives	✓ To draft the professional, local or national standards; ✓ To participate in the regional or international standardization activities as the representatives of the organization. ✓ To engage in standardization management affaires in the government and big companies.	
Operation Summary	✓ 2004- present ✓ About 30 students graduated each year from MEE and TTMM ✓ The students from MEE and TTMM for master degree have 2.5 years to obtain their degrees.	
Textbook(Syllabus) or Curriculum Summary	Title:	MEE and TTMM curriculum
	Authors, Year	N/A
	Table of contents (curriculum or Syllabus)	1. Standardization Principle (36Hour) 2. WTO TBT and SPS (36H) 3. ISO 9001 Standard and Quality System Certification

**** Prepared by the Project Editor***

****Based on ISO Focus issue in Nov 2007 and ICES 2nd Workshop proceedings***

**** (please contact following person for further information):***

Economy	China
Org/Ministry	China Jiliang University
Position	Dean, College of Economics and Management Chief Director of the program on Standardization
Name	Prof. SONG Mingshun
Phone, Email	+85-571-86914402, smsqm@cjlu.edu.cn

D12. EC(EU)-Asia Link Project (Annex.B #17)

Title **(weblink)**	EU-Asai Link – "Standardization in companies and markets" (website:)
Operator **(website)**	Helmut-Schmidt-University, University of the Federal Armed Forces – Hamburg (www.asia-link-standardization.de)
Type	F4) Graduate – Master's Program
Learning **Objectives**	In this program, the audience (students) learn : ✓ the textbook : "Standardization in companies and markets" ✓ An e-learning-based lecture series on the Internet
Year	2004~2006
Operation **Summary**	**Main Activities** **Activity 1:** Kick Off: Inviting all European Associated Project partners and multipliers as well as the international, European and national Standardisation Bodies to Hamburg, Germany. **Activity 2:** Workshop 1: Definition of the curriculum profile. The Event was devoted to the curriculum development and was held in the Hanoi National Economics University, Vietnam, April 2004. **Activity 3:** Preparation of promotion material: Website Design and its implementation, preparation and distribution of a Brochure and Flyers, Press Kit, Press Releases and journal articles in research or other magazines. **Activity 4:** The mentorship of our Asian partners in August 2004 at Helmut Schmidt University in Hamburg, Germany meeting industry managers, international, European and national standardisation bodies representatives as well as the most important European researchers in the field of standardisation: This conference and workshop provided knowledge in (European) standardisation for the Asian partners putting

	them into the position their Teaching Modules and their specific content. **Activity 5:** Workshop 2: Structuring the curriculum in Hamburg, in August 2004. The workshop was devoted to find the exact and binding definition of the overall curriculuar structure, the modules and the specific unit content. **Activity 6:** PR-Tour and Monitoring Tour, in June 2005: Team Hamburg visited all 4 Asian partner universities with the following aims: informing the university and the interested teaching staff about the project via presentations and by offering an opportunity for discussion. In addition the Team Hamburg as well as our Asian partners took the chance to meet industry and commerce partners and the Asian associated partners from all 4 Asian Standardisation bodies as well as other Asian national universities. **Activity 7:** Preparation of teaching units in all six participating Project Teams: 22 teaching units/case studies prepared and distributed via the eLearning Open Source platform at Helmut Schmidt University Hamburg coherently and comprehensively covering current issues on Standardisation in Companies and Markets. **Activity 8:** Text Book Publication: The Publication was reviewed by an international group of scientists and academics through a Review Panel and there will be 200 copies distributed as the first ever comprehensive publication on Standardisation in Companies and Markets. **Activity 9:** Preparation and implementation of the curriculum, the teaching materials as well as the online eLearning curriculum. **Activity 10:** Workshop 3: Final Presentation of the curriculum, in August 2006 in China JiLiang University, Hang Zhou China. **Budget: 400.000,00€** **Start Date: January 2004 to Sep 2006 (Duration:33 months**	
Textbook(Syllabus)	Title 1 (textbook)	Standardization in companies and markets

or Curriculum Summary	Authors, Publisher, Year	Hesser, Feilzer, de Vries, et al Helmut-Schmidt-University Hamburg, 2006
	Table of contents (curriculum or Syllabus)	 0. General Introduction 1. Fundamentals of Standards and Standardization 2. An introduction – The History of Standardisation 3. Economic Aspects of Standardization 4. Development of Standards 5. Standardization in Product Development and Design 6. Standardization within a Company - a Strategic Perspective 7. External Standardization as a Company Strategy 8. Standardization and Innovation 9. International Standardization 10. Standardisation and international Law 11. The European Standardization Regulatory Framework 12. The Standardization Policy of the European Union 13. Standardization and Law in the Federal Republic of Germany 14. The European Union and its New Approach 15. Conformity Assessment 16. Metrological Measurement 17. Case Study: Quality Management Methods and SO 9000 Quality System Certification 18. Case Study: implementation of the SO 14000

		Environmental 19. Case Study: Aricultural Standardization * International and inter-cultural Project Management – The EU-Asia Link Project
	Title 2(elearing)	E-learning platform (www.hsu-hh.de/ilias) of the textbook
	Authors, Publisher, Year	Same with the textbook
	Table of contents (curriculum or Syllabus)	✓ Teaching units presented in chapters; ✓ Volume of text: approximately 20-30 pages; ✓ Figures, graphics: 20-30 per unit; ✓ Frequently asked questions: 10-15 per unit: ✓ Multiple-choice test, 10-15 questions; ✓ Exercises ✓ Glossaries
	Weblink	www.hsu-hh.de/ilias , www.pro-norm.de

**** Prepared by the Project Editor***

****Based on ISO Focus issue in Nov 2007 and ICES 2nd Workshop proceedings***

**** (please contact following person for further information):***

Economy	Germany
Org/Ministry	Helmut-Schmidt-University, University of the Federal Armed Forces – Hamburg
Position	Department of Standardization and Technical Drawing
Name	Univ.-Prof. Dr.-Ing.Wilfried Hesser
Phone, Email	Tel: +49(40) - 6541-2861, Fax: +49(40) - 6541-2092 Wilfried.Hesser@hsu-hamburg.de

D13. Egypt - PQI's programme (Annex.B #18)

Title **(weblink)**	PQI's programme (website:)	
Operator **(website)**	Productivity and Quality Institute (PQI) (website:)	
Type **(Target Groups)**		
Learning **Objectives**	In this program, the audience (students) learn : ✓ To increase technology transfers to firms and other institutions ✓ to access world markets, transfer technology, and promote good business practice and sustainable development ✓ to consolidate and broaden international cooperation in the development of educational programmes ✓ to be aware of and understand standardizations educational programmes to achieve quality and continuously increase professionalise	
Year **(with number of participants)**		
Operation **Summary**	PQI's programmes for post graduate degrees ✓ Address technical and managerial issues in quality management, and ✓ Understand the role of standardization for technology, business and sustainable development	
Textbook(Syllabus) or Curriculum **Summary**	Course 1	The International Register of Certificated Auditors(IRCA) certificated lead auditor training courses for ISO 9001: 2000, Quality management systems – Requirements, and ISO 14001: 2004, Environmental management systems – Requirements with guidance for use

	Course 2	The Charted Quality Institute (CQI) registered courses ✓ Understanding of business systems management
	Course 3	An Environmental Management Systems (EMS) programme ✓ Learning about the purpose, benefits and operational mechanisms of an EMS and the ISO 14000 family of standards on environmental management, as well as understand the role of auditors
	Course 4	A series of training courses on conformity assessment ✓ Learning to meet the needs of conformity assessment bodies in the Arab region
	Course 5	An occupational diploma programme for "consultants in designing, establishing and documenting quality managements systems according to the requirements of ISO standards"
	Course 6	Conferences on quality and standardization ✓ Learning to promote a rapid development of the region

**** Prepared by the Project Editor***

****Based on ISO Focus issue in Nov 2007***

D14. France – Univ of Technology Compienge (Annex.B #19)

Title	1. Master's degree in quality management (MQ) 2. Master's Programme NQCE(Normalization, qualite, certification et essays)	
Operator	The University of Technology of Compiegne	
Type	F4 Graduate (Ma)	
Learning Objectives	✓ To teach students to become specialists capable of applying standardization management and/or quality management for improving the performance of organizations	
Year		
Operation Summary	MQ: Lasts 9 months, with 4 months of hands-on experience work for a company NQCE: Takes 12 months to complete, and includes sox months of professional work experience	
Textbook(Syllabus) or Curriculum Summary	Title:	Master's degree in quality management (MQ) (in French and open to foreign students with a good command of English and a satisfactory level of French)
	Authors, Publisher, Year	1992
	Table of contents (curriculum or Syllabus)	• Performance and improvement • Management • Standardization, metrology, testing and • international trade • Structures and functions of metrological • services • Management, organizations and systems • Risk management within organizations • Information system management • Case study • Other management systems • Statistics • Quality management system
	Weblink	www.utc.fr/Mastermq

**** Prepared by the Project Editor***

****Based on ISO Focus issue in Nov 2007***

D15. France – ZFIB – Competetive Intelligene (Annex.B #20)

Title **(weblink)**	Standardization : a tool for Competitive Intelligence (weblink- www. wwweisti.fr)	
Operator **(website)**	ZFIB Conseil (Françoise Bousquet) (website: www.zfib.com)	
Type **(Target Groups)**	F4 High Level Engineers	
Learning Objectives	<u>In this program, the audience (students) learn :</u> ✓ The strategic importance of standards in trade ✓ Understanding standardization: knowledge about the process, about the actors , knowledge about the behaviour when participating to the process (lobby.) ✓ **Why and how participating to the standardization process is an act of competitive intelligence (collecting data on the environment, the competitors, the trends of the technology etc…)** ✓ **How to organize the standardization function in companies in order to benefit of the competitive intelligence it brings**	
Year **(with number of participants)**	✓ 2007**. It is the first time : Creation of this Chair Standardization within the Curriculum of Competitive Intelligence Master** ✓ An average of 12 students	
Operation Summary	✓ In addition to the theory (illustrated by examples) taught by the teacher, numerous exercises and research are required. For instance the students should be able to understand and present related to a specific technology: the state of the arts for the related standardization and regulation, the major issues to be solved , and the trends of the market with the role of relevant standards for this market	
Textbook(Syllabus) or Curriculum Summary	Title	*(language : French)*
	Authors, Publisher, Year	The book is internal to the School (not published officially). It is a support for the course

	Table of contents (curriculum or Syllabus)	Important note: this description concerns only the Course given in Ecole Centrale. **Table of Content** **The Open Systems Issue** 1 Introduction **2. The issue of openness** 3. Definitions 4. The tools for openness 4.1 Definition of a norm (official standard) 4.2 The essential elements of the definition 4.3 What you should remember from the definition 4.4 The scope and impact of a norm 4.5 What is a Standard? 4.6 The different types of standards 4.7 Open Norms and Standards 4.8 Open Standards and Open Source 5. Standardization in the ICT Field 6. Standardization and Research 7. What to standardize? 8. Advantages of standardization for the suppliers 9. Advantages for the users 10. History of a standard 11. Standard and Norm 11.1 PAS 12. Open source 12.1 What is it? 12.2 The issue. What standards? 12.3 Open source development 12.4 Adoption of the model and its difficulties **The official standardization organisations** 13. International Organizations 13.1 ISO 13.2 IEC 13.3 Liaison organisations

		13.4 The International Standards 13.4.1 IS 13.4.2 The steps in standard setting 13.4.3 ISP 13.5 International standard development 13.6 Other Normative International Documents 13.6.1 PAS (Publically Available Specification) 13.6.2 Technical Report 13.6.3 IWA (international Workshop Agreement) 13.6.4 ITA (International Technical Agreement) 13.7 ISO/IEC/JTC1 13.8 ITU 13.9 A steering committee : the WSC (Worldwide Standardization Coordination) 14. Europe The construction of the Common Market 14.1 The e-Europe Programmme
		15. The European Standardizatgion Organizations 15.1 CEN (Comité Européen de Normalisation) 15.2 CENELEC 15.3 ETSI 15.3.1 Structure of ETSI 15.3.2 Documents produced by ETSI 15.4 A steering Committee : the ICTSB 15.5 The European process for standardization 15.6 The normative documents of the European System 15.6.1 Particular case of CWA

		15.7. The links between Research and Standardization 15.7.1 STAR Standardization and Research 15.8 The CEN/ISSS 15.8.1 the workshops 15.8.2 Other committees (Forum, Focus Group) 16. Les organismes nationaux 16.1 AFNOR Association Française de Normalisation 16.2 16.2 The AFNOR Group 16.3 16.3 Merging AFNOR and AFAQ 16.4 Documents produced by AFNOR 16.4.1 Experimental standards (prestandard) 16.4.2 Official standards (Homologuées) 16.4.3 FD Fascicules de Documentation 16.4.4 Other documents 16.5 AFNOR Group Organization 16.5.1 Strctures for programmation and oientation 16.5.2 Structures for standard development 16.6 Some figures for AFNOR **17. UN/CEFACT** 18. Coordination between organizations (strengths and weaknesses) 19. WTO and its role in standardization 19.1 Trade barriers 19.1.1 Trade barriers in Europe 19.1.2 Trade barriers in the world **20. Public markets in Europe and in France** 20.1 The European directives for public

		markets (procurements) 20.2 The code for Public markets in France
		The other Standardization Organizations 21 CONSORTIA and FORA 21.1 ECMA 21.2 IETF 21.3 OMG 21.4 OASIS 21.5 The Open Group 21.6 W3C **22 The mixt organizations** 22.1 VITA 22.2 Consulting organizations for consortia **23 Sources for standards** 23.1 Specifications from associations or societies 23.1.1 IEEE 23.1.2 EIA 23.2 Professional Organizations **CERTFICATION** **24. Certification Why?** **25 Two types of certification** **25.1 Certification related to products and Services** **25.2 How does it work?** **25.2.1 Clauses for conformity** **25.2.2 Abstract test suites** **25.2.3 Laboratories** 25.2.4 Test tools **25.2.5 Test methodology** **25.2.6 Test report** **25.2.7 Certification organization**

		25.2.8 Certificate 25.2.9 Mutual recognition 25.3 Different categories of certificates 25.3.1 Type certificat 25.3.2 Product certificat 25.4 Enterprise certification 25.5 Examples of enterprises certification 25.6 First party and Third Party Certification 25.6.1 The supplier's declaration 26 The Certification system. 26.1 AFNOR Role 26.2 Convergence (public and private sectors) 26.3 Marks 26.3.1 NF Mark 26.3.2 CE Mark 26.4 Accreditation 26.5 Notified Organizations 26.6 The COFRAC 26.7 European Scheme for Certification
		The Real Life 27 Professional Organizations (policy and strategy related to standardization) 27.1 National Trade Associations 27.1.1 In France 27.1.2 Elsewhere 27.2 International Federations: EICTA Etc… 27.3 The choices **The Standardization function in Companies** 28. The issue 29. Men handling and positionning 30. Company Strategy for standardization: choices 30.1 French standards on this issue 31. Example : Sun Microsystems 31.1 Strategies

		Some Business Cases **32. Quality** 32.1 Definitions 32.2 Standardization for Quality: the actors 32.2.1 ISO TC 176 32.2.2 Particular case of software quality 32.2.3 The ISO9000 series **33. Network Administration** 33.1 Criteria for network administration 33.2 Principle of MIB 33.3 Standardization for network administration 33.3.1 The other actors 33.4 Comparison of the different approaches 33.4.1CMIP 33.4.2 SNMP **34. The Criteria for Information System Security Evaluation** 34.1 Information System Security 34.1.1 Why to standardize? 34.1.2 The threats 34.2 Evaluation of Information System Security 34.2.1 The orange Book (TCSEC) 34.2.2 The ITSEC 34.2.3 Definitions 34.2.4 Criteria 34.3 The common Cirteria CC 34.4 The standardization actors for information System Security Criteria 34.5 Evaluation **35. LDAP : the standard for directory service** 35.1 Directory technology 35.2 Directory standardization 35.3 The market

		36. Bibliography **37. Glossary and annexes**
		Training course : Standardization tool for competitive intelligence : The related documents for the course includes in particular (in addition to the background) the description of the information that could be gathered while participating in standardization (list of attendees, agendas, contributions, behaviour of participants, technology trends etc…) The link is constantly done with the competitive intelligence definition and function in the companies as well as the description of necessary skills . It has been the firs year of such a cycle- the support ifs not yet deeply written. I will make it available as soon as possible
	Weblink	

**** Submitted by (please contact following person for further information):***

Economy	France
Org/Ministry	Company : ZFIB Conseil EURL
Position	Manager
Name	Miss Bousquet Françoise
Phone, Email	+ 33 1 43 48 43 69 francoise.bousquet@zfib.com

D16. France – ZFIB Conseil – Openness (Annex.B #21)

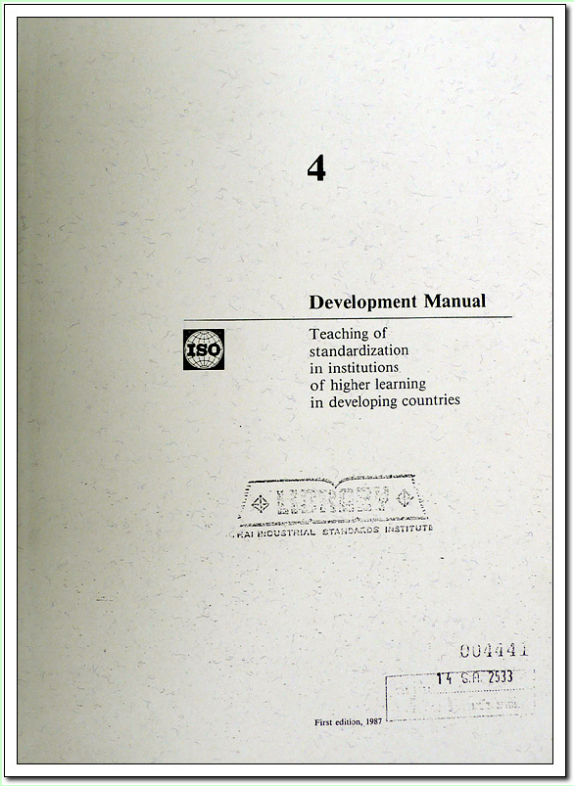
Title **(weblink)**	Standardization : a tool for Openness
Operator **(website)**	ZFIB Conseil (Françoise Bousquet) (website: www.zfib.com)
Type **(Target Groups)**	F4 High Level Engineers
Learning **Objectives**	In this program, the audience (students) learn : ✓ The importance of standards as a tool for open systems ✓ Understanding standardization: knowledge about the process, about the actor, knowledge about the behaviour when participating to the process (lobby.) ✓ The links between standardization and regulation
Year **(with number of participants)**	✓ 2005, 2006, 2007 ✓ An average of 12 students
Operation **Summary**	✓ In addition to the theory (illustrated by examples) taught by the teacher, numerous exercises and research are required. For instance the students should be able to understand and present related to a specific technology: the state of the arts for the related standardization and regulation, the major issues to be solved , and the trends of the market with the role of relevant standards for this market
Textbook	Same syllabus with List#20 (ZFIB – Competitive Intelligence)

**** Submitted by (please contact following person for further information):***

Economy	France
Org/Ministry	Company : ZFIB Conseil EURL
Position	Manager
Name	Miss Bousquet Françoise
Phone, Email	+ 33 1 43 48 43 69 francoise.bousquet@zfib.com

D17. ISO – DEVCO – Development Manual 4 (Annex.B #23)

Title **(weblink)**	Development Manual Teachign of standardization on institutions of higher learning in developin countries (website:)	
Operator	ISO DEVCO (website:)	
Type	F3) Undergraduate (university students)	
Learning Objectives	In this program, the audience (students) learn : ✓ Activities such as the national standards body handling the formulation of standards, testing, metrology, quality assurance and the certification of products ✓ The role that standardization plays in every activities	
Year	1987	
Operation Summary	It is NOTABLE that this manual proposed two courses: 1. First course is for engineering and science students in institutions of higher learning and proposing 25 hours of length 2. Second course is for Non-engineering and non-science students in institutinos of higher learning and proposing 12 hours of length	
Textbook(Syllabus) or Curriculum Summary	Title	Development Manual Teachign of standardization on institutions of higher learning in developin countries
	Authors, Publisher, Year	✓ Mr. J.D.J. Hawksley of the British Standards Institution (BSI) et al (Six Co-authors)
	Table of contents (curriculum or Syllabus)	A. Long course B. Short course Chapter 1 Introduction to standardization Chapter 2 Types of standards Chapter 3 Organization of standards work

		Chapter 4 Elaboration of standards Chapter 5 The reasons for standardizing Chapter 6 Safety standards Chapter 7 Metrology Chapter 8 Standards, quality assurance and certification Chapter 9 Standards and production planning  4 Development Manual Teaching of standardization in institutions of higher learning in developing countries THAI INDUSTRIAL STANDARDS INSTITUTE 004441 14 S.A. 2533 First edition, 1987

**** Prepared by the Project Editor***

****Based on ISO DEVCO manual 4.***

**** The hardcopy of this manual was kindly provided by Ms. Chaowalee Raranamungmeka form Thai Industrial Standards Institute (TISI) during the 2nd APEC SCSC education meeting in Cairn, Australia.***

D18. Japan – JSA – Business Solution (Annex.B #24)

Title	Standardization for business solution	
Operator (website)	JSA(Japanese Standards Association) (website: http://www.jsa.or.jp)	
Type (Target Groups)	F4. University graduate students (please use 'Type' in question used in 1.3 or 2.1)	
Learning Objectives	In this program, the audience (students) learn : ✓ Why standardization is important in global trade and business How standards work as a strategic management tool, et al	
Year	2007 (50 students in one university)	
Operation Summary	Open one university graduate students (master of business administration) six times (18 hours) per quarter Team Teaching Methods (Teachers from various sectors: university, government, private sector)	
Textbook Summary (if applicable)	Title	Standardization for business solution *(language : Japanese)*
	Authors, Publisher, Year	Six lectures Not published
	Table of contents	Ch1. Standardization Overview Ch2. International Standardization, Japanese policy of standards and conformance Ch3. Business Strategy and Standardization Ch4. High technology and Standardization Ch5. Management standards and Company standards Ch6. Social system and JIS
	Weblink	Not available
Lessone Learned	→ Please use the attached form in Annex. A.	

**** Submitted by (please contact following person for further information):***

Economy	Japan
Org/Ministry	Japanese Standards Association (JSA)
Position	Senior Researcher
Name	Takashi Matsumoto (Mr)
Phone, Email	+81-3-5770-1596, matsumoto@jsa.or.jp

D19. Japan – Tokyo Univ – MOT (Annex.B #25)

<table>
<tr><td>Title
(website)</td><td colspan="2">MOT programme, “strategic management of industrial standardization and intellectual property”</td></tr>
<tr><td>Operator
(website)</td><td colspan="2">Professional Graduate School of Technology (MOT)
the Tokyo University of Agriculture and Technology(TUAT)</td></tr>
<tr><td>Type
(Target Groups)</td><td colspan="2"></td></tr>
<tr><td>Learning
Objectives</td><td colspan="2">✓ To train experienced engineers on the latest technological and management strategies, leading them on a path to become future chief executives or technology and/or information officer
✓ To enable graduates to forecast/hedge technological risks quantitatively, adapting scientific and management knowledge to attain rewards</td></tr>
<tr><td>Year</td><td colspan="2">2005</td></tr>
<tr><td>Operation
Summary</td><td colspan="2">One of the interesting features of TUAT/MOT is the thorough use of e-learning and technology. All of the required materials and information are listed and stored in a computer programme named JENZAVER. Both professors and registered students can access and extract information. Lectures are given at either the main urban campus or the downtown campus, both connected by real time TV. Professors and students can therefore discuss together even if they are physically apart. In addition, all lectures are partially uploaded two or three days later, to enable students who could not attend the class to learn via the Web anywhere in the world.</td></tr>
<tr><td rowspan="3">Textbook(Syllabus)
or Curriculum
Summary</td><td>Title:</td><td>MOT programme, “strategic management of industrial standardization and intellectual property”</td></tr>
<tr><td>Authors,
Publisher, Year</td><td></td></tr>
<tr><td></td><td>Whether de-facto or de-jure concerns, the technology standardization will bring a big risk if any CEO, CTO or CIO misjudges its strategy, and their companies will suffer immeasurable financial and social damage. So, TUAT/MOT educates the basics and application of industrial standardaization including ISO activity, related policy and strategy</td></tr>
</table>

		with respect to their risks. **Standardization policy and strategy area** • Standardization strategy, by Prof. T. Yamamoto • Industrial standards, by Prof. M. Tsutsumi • Standardization policy, by Prof. M. Takagi
		Specific technology area • Manufacturing systems standardization, by Prof. Y. Furukawa • Products life cycle standards, by Prof. Y. Furukawa • Total Quality Management and ISO 9000, by Prof. R. Kaneko • Environmental standards policy, by Prof. H. Kameyama • Environment and ISO 14000, by Prof. N. Kudo • Safety and security standards, by Prof. M. Nakamura The curriculum requirements are as follows in order to receive the degree. To finish mimimum 46 credits during 2 years schooling (4 semesters, 1 semester is 15 weeks) including Projects as the required subject and to satisfy the following credits in each specified knowledge area. One subject consists of 90 minutes lecture 15 times (2 credit). **Basics (B)**, Risk Basics (BR) 6 subjects, Management Basics (BM) 8 subjects: More than 4 subjects (8 credits) must be finished. **Programme (P)**, +Technology Management and Risk (PT) 10

		subjects, +Advanced Industry Creation and Risk (PA) 12 subjects, +Strategic Management of Industrial Standardization and Intellectual Property Intellectural Property Right and Risk (PI) 6 subjects, **Standardization and Risk (PS) 9 subjects and 2 special subjects**, + Management Strategy and Risk (PM) 8 subjects, More than 6 subjects (12 credits) in the selected Programme and 2 subjects (4 credits) from another every Programme must be finished. **Project (P)**, Field Study (FS), Intern-ship (IS), Case Study (CS), Business Plan (BP) : CS, BP and one of FS or IS, in total 3 subjects (10 credits) must be finished.
	Weblink	

**** Prepared by the Project Editor***

**** Based on ISO Focus issue in Nov 2007 and Introductory Documents provided by Prof. Yuji Furukawa, TUAT, Japan***

**** (please contact following person for further information):***

Economy	Japan
Org/Ministry	Tokyo University
Position	Dean for Graduate School of Technology Management
Name	Professor Yuji Furukawa
Phone, Email	E-mail y-furuka@cc.tuat.ac.jp, Tel & Fax + 81-42-388-7105

D20. Korea – KSA and Far East Univ (Annex.B #26)

<table>
<tr><td>Title
(weblink)</td><td colspan="3">KSA – Far East University ‘Global Standards Strategy’
(weblink: http://www.kdu.ac.kr/)</td></tr>
<tr><td>Operator (website)</td><td colspan="3">KSA (Korean Standards Association) (website: www.ksa.or.kr)
And Far East University (www.kdu.ac.kr)</td></tr>
<tr><td>Type
(Target Groups)</td><td colspan="3">F3) University Students</td></tr>
<tr><td>Learning
Objectives</td><td colspan="3">In this program, the audience (students) learn :
✓ Why standardization is important internationally
✓ How standards have been developed worldwide
✓ Standards Strategies of U.S.A., Japan, Europe and China</td></tr>
<tr><td>Year
(with number of participants)</td><td colspan="3">2006 (128 students)
2007 (104 students)</td></tr>
<tr><td>Operation Summary</td><td colspan="3">Open for university undergraduate students (freshman/ sophomore)
3 Credits (48hours) per semester
One Field Trip per semester
Operators manages Lecture Database</td></tr>
<tr><td rowspan="3">Textbook Summary
(if applicable)</td><td>Title (language)</td><td colspan="2">Global Standards Strategy (Korean)
*Part 1, 2 below are syllabi of first two courses</td></tr>
<tr><td>Authors,
Publisher, Year</td><td colspan="2">Mr. Kang, Ey Goo and 4 co-authors
Far East University Press, 2007</td></tr>
<tr><td>Table of contents</td><td>PART 1 : International Standards Strategies
Ch1. Standards Strategy of U.S.A
Ch2. Standards Strategy of Japan
Ch3. Standards Strategy of Europe</td><td>PART 2 : Structure and Strategies of Standardization Organizations
Ch6. OMA
Ch7. CCSA Ch8. ARIB
Ch9. TTC
Ch10. TIA</td></tr>
</table>

		Ch4. Standards Strategy of China Ch5. Standards Strategy of Korea	Ch11. ATIS Ch12. ANSI Ch13. ASTAP Ch14. IEEE 802 LMSC Ch15. IETF Ch16. W3C
		Part I, II – Freshman (Implemented) Part III, IV – Sophmore (just Implemented) Part V, VI – Junior (Under development) Part VII, VIII – Senior (Under development)	
	Weblink	Not available	

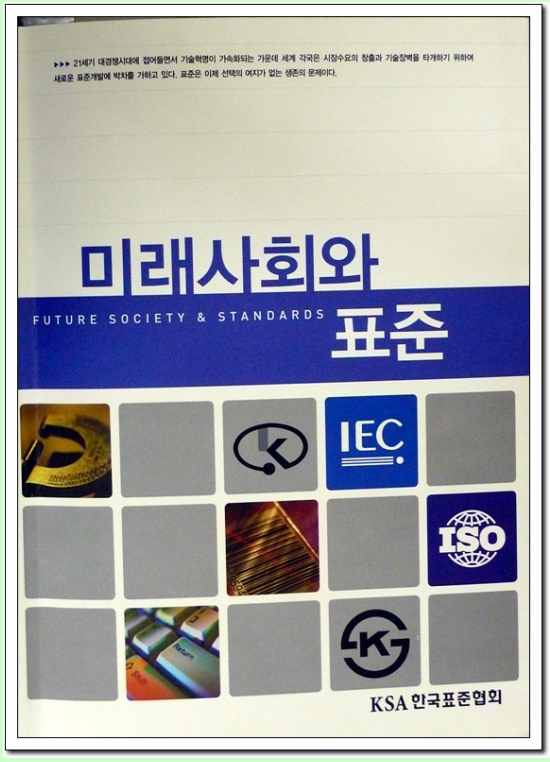
**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Researcher
Name	Mr Channy Lee
Phone, Email	+82-2-16-317-3579, channy@ksa.or.kr

D21. Korea – KSA UEPS (Annex.B #27)

Title (weblink)	KSA – University Education Program on Standardization(UEPS)(Korean) 'Future Society and Standards' (weblink: http://www.kssn.net/StdLect/Intro/Intro_list1.asp)	
Operator (website)	KSA(Korean Standards Association) and Universities (website: www.ksa.or.kr)	
Type	**University undergraduate students**	
Learning Objectives	To expose students to various topics on standardization, from the basic concept of standards to in-depth knowledge on standardization In this program, the audience (students) learn : ✓ Why standardization is important in global trade ✓ How standards are developed ; who develop standards domestically and internationally ; where to find standards and related information ✓ How standards work as a strategic Management tool, et al	
Year (with number of participants)	✓ 2004 (982 students in eleven universities) ✓ 2005 (4,830 students in thirty five universities) ✓ 2006 (6,681 students in forty six universities) ✓ 2007 (3,353 students in thirty eight universities for spring semester)	
Operation Summary	✓ Open for university undergraduate students (all majors/grades) - engineering-oriented program but not limited to other major ✓ Two(32hours) ~ Three(48hours) Credits per semester ✓ Team Teaching Methods (Teachers from various sectors) ✓ One Field Trip per semester(Optional) ✓ Flexibility in specific course design to reflect different major /levels ✓ Website for teaching materials, exams, teachers' community ✓ Operators manages Lecture Database	
Textbook(Syllabus) or Curriculum Summary	Title	Future Society and Standards *(Korean)*
	Authors, Publisher, Year	Mr. PARK, et al (fourteen co-authors) Korean Standards Association, 2004-2007

	Table of contents (curriculum or Syllabus)	**PART 1 : Introduction of standardization** Ch1. Standardization overview 1. Definition of standardization 2. Purpose of standardization 3. Functions of standards 4. Importance of standards 5. Definition and classification of standards 6. Standards development 7. Trends of national and international standardization 8. Future of standards Ch2. International standardization 1. Overview of international standardization 2. Introduction of international standards organizations and international standards development processes Ch3. Industrial standardization in Korea 1. History of Korean industrial standardization 2. Korean standardization system 3. Overview of measurement standards 4. Government policy in standardization system Ch4. Company standards & quality management 1. Introduction of company standards 2. Quality management 3. How to implement company standards **PART 2 : Application of standardization** Ch5. Company standards utilization 1. Case of company standards 2. Various types of company standards Ch6. Conformity assessment 1. Introduction of conformity assessment 2. Conformity assessment activities in Korea

		3. Conformity assessment activities in other countries 4. Conformity assessment and MRA Ch7. Standards & IPR 1. Introduction 2. IPR and economic activities 3. IPR policies of SDOs 4. IPR and technology development 5. Standards and IPR 6. Standardization and antitrust law 
	Weblink	http://www.kssn.net/StdLect/Intro/Intro_list1.asp

**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Researcher
Name	Danbee KIM
Phone, Email	82-2-6009-4845, emailkim@ksa.or.kr

D22. Netherlands – RSM Erasmus Univ – Undergraduate (Annex.B #28)

Title (weblink)	Business Management - Standardization strategy
Operator (website)	
Type (Target Groups)	The course is open to: 1. students who do the normal curriculum Business Administration 2. students with a Bachelors degree in higher vocational education who intend to do a Masters in Business Administration and have to follow an intensive one-year programme to prepare for that.
Learning Objectives	<u>In this program, the audience (students) learn :</u> In the 3rd year of the Business Administration curriculum, groups of three students have to write a Bachelor Thesis. The general objective of this course is that students learn to design a research project (in the period September – December) and then to conduct the research and report about it in the form of a Bachelor Thesis (January – May). The topic of this thesis differs per group. One of the options is to take the topic 'standardization strategy'. More in particular, the standardization-related objectives are: ▪ to get a general overview of the area of standardization ▪ to get the knowledge and skills needed to develop a standardization strategy for an organization or group of organizations.
Year (with number of participants)	2004-2005 : 24 2005-2007 : 24 2006-2007 : 24
Operation Summary	The programme content mixes a general part about the methodology of business research with the specific elements of the topic of – in this case – standardization strategy. This description will be limited to the latter. General knowledge on standardization is achieved in the form of self-study, presentations by students and in-class discussions. There are no lectures. For the self-study, the book *Standaard of maatwerk – Bedrijfskeuzes tussen uniformiteit*

	en verscheidenheid is used. The standardization topics differ per group. In the academic year 2004-2005 the topics were: ▪ Stakeholder involvement in the development of International Financial Reporting Standards ▪ Stakeholder influence in standards setting – The case of European standards for protective clothing ▪ Product quality of cannabis – Standardization in a semi-criminal environment (2 groups of students) ▪ Standardization of personal identification systems in professional soccer ▪ Access rules for the Olympic Games ▪ Process standardization in the manufacturing of cars ▪ Application of RFID (Radio Frequency Identification) in (medical) emergency treatment. Topics in the academic year 2005-2006: ▪ Standardized payment system for Internet shopping - Feasibility of the iDEAL system ▪ Professional soccer – Standardization of salaries ▪ Professional soccer – UEFA licensing system ▪ Biometric identification cards – Benchmarking study Malaysia - Netherlands ▪ Mass customization in services – The case of fire and theft insurances ▪ Perforrnance standards for primary schools – the case of arithmatics ▪ European car safety standards ▪ Health logos on food products ▪ Factors for standards dominance – A literature review. Topics in the academic year 2006-2007: ▪ Standards for geothermic energy ▪ Standards for fuel cell technology ▪ Performance standards for development agencies ▪ Marks of conformity – Added value of certification and accreditation – The case of food product logos ▪ Consumer preferences related to mass customization – The case of jeans ▪ Standards for public procurement of road construction

<table>
<tr><td></td><td colspan="2">

- Standards for RFID at product level in retail – The case of dress shops
- Extent to which standards dominance is predictable

Students have to deliver a research proposal and a bachelor thesis. They have to present the proposal in class. The bachelor thesis is presented to a jury consisting of a researcher of RSM Erasmus University, and the General Director and the Head New Business Development of the ISO member body in The Netherlands: NEN (Netherlands Standardization Institute).
</td></tr>
<tr><td rowspan="3">Textbook(Syllabus) or Curriculum Summary</td><td>Title</td><td>Standaard of maatwerk – Bedrijfskeuzes tussen uniformiteit en verscheidenheid (language : Dutch)</td></tr>
<tr><td>Authors, Publisher, Year</td><td>Prof.dr.ir. C.A.J. Simons. & dr.ir. H.J. de Vries
Academic Service (Schoonhoven, The Netherlands), 2002. The book can be ordered at NEN, http://www2.nen.nl/nen/servlet/dispatcher.Dispatcher?id=083665 .</td></tr>
<tr><td>Table of contents (curriculum or Syllabus)</td><td>Standards for business -Company choices between uniformity and variety. (Translation of the table of contents)
An English version scheduled for 2008. Compared to the Dutch version there will be less emphasis on the Dutch / European situation and the link with recent findings in standardization research will be strengthened.

Table of Contents

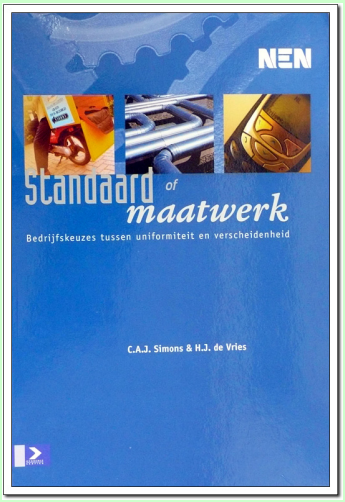
Preface

1 Introduction
1.1 Standardization examples
1.2 General benefits of standardization
1.3 Increasing importance of standardization
1.4 ‘Freeze’ or renew?
1.5 Requirements for good standards
1.6 Standards as agreement or recipe, consensus
1.7 Categories of standards
1.8 Categories of standards development processes
1.9 Definitions of standardization</td></tr>
</table>

		1.10 Type reduction 1.11 Remember and apply **2 External standardization** 2.1 Aims of external standardization 2.1.1 Companies 2.1.2 Consumers 2.1.3 Trade unions 2.1.4 Other parties 2.2 Formal standardization 2.3 NEN – Netherlands Standardization Institute 2.4 Standardization at the worldwide level 2.5 Standardization at the European level 2.6 Standardization at the worldwide, European or national level 2.6.1 Feasibility of the national level 2.6.2 European or worldwide level 2.6.3 Should national standardization organizations be involved in European standardization? 2.7 Sector-specific standardization 2.8 Standardization by governmental agencies 2.9 Consortia standardization 2.10 Formal standardization or consortia 2.11 Effectiveness of participation in external standardization 2.11.1 Power 2.11.2 Negotiating 2.11.3 Negotiators 2.11.4 Feed-back 2.12 Remember and apply **3 Conformity assessment** 3.1 Parties involved in conformity assessment 3.2 Voluntary certification as a commercial tool 3.2.1 Management systems certification 3.2.2 Product certification 3.3 Certification – voluntary or compulsory

		3.4 Impact of revisions of standards on validity of certificates 3.5 Notified bodies 3.6 Accreditation 3.7 Mutual recognition of certificates 3.8 Problems with certification 3.9 CE-mark 3.8.1 Requirements for being allowed to place the CE mark 3.8.2 The route towards the CE mark 3.9 Remember and apply **4 Standardization methodology** 4.1 Mechanisms in market success of standards 4.1.1 Installed base, conversion, lock in 4.1.2 Dominant design, bandwagon 4.1.3 First agent, free rider, dominant agent 4.1.4 Case: competing standards for Banking chipcards in the Netherlands 4.2 Standards' structure 4.2.1 Modularization 4.2.2 Layer structures 4.2.3 Integration of technologies, components, and markets 4.2.4 Parallellization 4.3 Assortment determination 4.3.1. Geometric series 4.3.2 Demand distribution 4.3.3 Cost/benefit optimization in assortment determination 4.4 Remember and apply **5 Standardization and innovation** 5.1 Innovation - introduction 5.2 Innovation processes 5.3.1 Archaeology 5.3.2 Utilization of disturbance

		5.3.3 Analytical continuation 5.3.4 Combination of existing entities 5.3.5 Serendipity 5.3.6 Splendid ideas 5.3 Paradox of standardization and innovation 5.4 Standardization in process innovation 5.5 Innovation related to management systems 5.6 Standardization in product innovation 5.7 Innovation of services 5.8 Innovation on environmental aspects 5.9 Standardization in four generations of R&D management 5.9.1 Standardization in the first generation of R&D management 5.9.2 Standardization in the second generation of R&D management 5.9.3 Standardization in the third generation of R&D management 5.9.4 Standardization in the fourth generation of R&D management 5.10 Standards and intellectual property rights 5.10.1 Patents and formal standardization 5.10.2 Standardization strategies for stand-alone inventions 5.10.3 Standardization strategies for inventions that are part of a system 5.10.4 Standardization strategies in case of complex systems that perform a public function 5.11 Standardization for innovation projects 5.12 Remember and apply **6 Balancing standard and tailor-made within a company** 6.1 Company strategy and standardization 6.2 Prioritising standardization choices 6.3 Organization of company standardization

		6.3.1 Process model for company standardization 6.3.2 Company standardization tasks 6.3.3 Classical model of company standardization 6.3.4 Task-directed model of company standardization 6.3.5 Standardization in small and medium-sized enterprises 6.4 Standardization areas within a company 6.4.1 Procurement 6.4.2 Production 6.4.3 Information management and automation 6.4.4 Human resources management 6.5 Type reduction and standardization in marketing 6.6 Company standards 6.7 Type reduction for cost saving – case 6.8 Strategic balancing between standard and tailor-made – examples 6.9 Remember and apply 
	Weblink	http://www2.nen.nl/nen/servlet/dispatcher.Dispatcher?id=083665

**** Submitted by (please contact following person for further information):***

Economy	Netherlands
Org/Ministry	RSM Erasmus University
Position	Associate Professor Standardization
Name	Henk de Vries
Phone, Email	+31 10 408 20 02 / hvries@rsm.nl

D23. Netherlands – RSM Erasmus.Univ – MBA/MOT/MOI (Annex.B #29)

Title **(weblink)**	RSM Erasmus University – Standardization Management (MBA/MOT) (http://www.rsm.nl/portal/page/portal/RSM2/Programmes/Masters%20of%20Science%20in%20Business%20Administration/Management%20of%20Innovation/Programme/Curriculum/Master%20Thesis)
Operator **(website)**	
Type **(Target Groups)**	F4) Graduate school (MBA) * Students can devote their Master thesis to standardization. In many cases, this is combined with an internship in a company or other organization. * Masters Students Business Administration, in most cases with the specialization 'Innovation Management or Supply Chain Management (please use 'Type' in question used in 2.1)
Learning **Objectives**	In this program, the audience(students) learn: to de research in the area of business administration, with the possibility to do this on the topic of standardization.
Year **(with number of participants)**	2004: 7 2005: 10 2006: 23
Operation **Summary**	Available time: 4 months (in practice often more).

Topics chosen in 2006 :

Company / organization:	Topic:
▪ Nike Europe	Effects of job standardisation on sales force turnover
▪ UR University	Accreditation of 100 % E-learning
▪ Bell & Herrmann (Consultants)	Implementing the ISO 9001:2001 standard for Quality Management in SMEs
▪	Implementation of ISO 9001:2000 – a longitudinal study
▪	Impact of ISO 9001:2000 on product innovation
▪ General Electric Plastics	Applying Six Sigma in payment processes
▪ DMV International (Diary Food)	Standardization of management systems within a multinational
▪ De Haan (Animal Food)	Implementing HACCP (Food safety management standard) in an SME

▪ IHC Holland Parts & Services (Dredging Equipment)	Performance measurement as input for improved process performance
▪ Steco Metaalwaren (Metal components for bicycles)	Lean production in SMEs
▪ General Electric Plastics	Implementing a standardized distribution model for multinational companies
▪ Elektromat (Wholesaler and System Designer of Home Electronic Systems)	Standardisation of services
▪ NEN (National Standards Body)	Standards for outsourcing of business services
▪ Shell	Standardization and knowledge processes
▪ NAM (Exploration and production of oil and gas) (2 students)	Standardization related to procurement of business services
▪ Gemeente Rotterdam (Municipal Authorities)	Interorganisational cooperation
▪ AIDA (Organisation for sustainability initiatives)	Energy transition: standards for use of residual heat
▪	Innovation versus Standardisation – The influence of regulatory performance standards on the diffusion of innovation in loosely coupled systems.
▪	Dominant design or multiple designs? – A case study on factors contributing to multiple designs in the Flash Memory Card Industry
▪ Epyon (Start-up company on fast charging technology)	The Path towards a Dominant Design of Integrated Dual Technologies
▪ Endress & Hauser	Standardization strategies: Ways of developing a standard and ways of getting acceptance for a standard in favour of a supplier

**** Submitted by (please contact following person for further information):***

Economy	Netherlands
Org/Ministry	RSM Erasmus University
Position	Associate Professor Standardization
Name	Henk de Vries
Phone, Email	+31 10 408 20 02 / hvries@rsm.nl

D24. Sri Lanka - U.Moratuwa (MBA) (Annex.B #30)

Title **(weblink)**	MBA in Management of Technology Program, 'Quality Management & Standardization'	
Operator **(website)**	University of Moratuwa, Sri Lanka	
Type **(Target Groups)**	F4: University Graduate Students	
Learning Objectives	<u>In this program, the audience (students) learn :</u> ✓ quality as a strategic tool for competitiveness ✓ about the ways and means to achieve quality of the organizational output in order to enhance organizational effectiveness and efficiency ✓ the importance of standardization as a marketing tool and a company strategy ✓ understand the different methods of standardization	
Year **(with number of participants)**	✓ 2006 ✓ (48)	
Operation Summary	✓ Open for three MBA programs as an elective ✓ Lectures were conducted by two lecturers ✓ Evaluation: Final Exam (50%); Continuous Assessment –Quiz and Group assignment – (40%); and Class participation (10%)	
Textbook(Syllabus) or Curriculum Summary	Title	Standardization in Companies and Markets *(language : English)*
	Authors, Publisher, Year	(in case of textbook) Hesser, W.; Feilzer, A.; de Vries, H et al. Helmut Schmidt University, Hamburg, 2006
	Table of contents (curriculum or Syllabus)	Introduction to Quality Management Quality management Approaches and Quality Control Tools & Techniques Total Quality Management

		Introduction to Standardization Standards and Certification Standardization as a Strategy
	Weblink	

**** Submitted by (please contact following person for further information):***

Economy	Sri Lanka
Org/Ministry	University of Moratuwa
Position	Professor
Name	Niranjan D. Gunawardena
Phone, Email	+94112650301; ndg@civil.mrt.ac.lk

D25. UK – BSI Online Education Program (higher education) (Annex.B #31)

Title **(weblink)**	BSI's Education Programme (higher education) (weblink: http://www.bsieducation.org/Education/HE/subjects-standards/default.shtml)	
Operator **(website)**	BSI (www.bsi-global.com)	
Type **(Target Groups)**	F3 University Undergraduate F4 University graduate students (higher education)	
Learning Objectives	This section provides students, lecturers, librarians and researchers in further and higher education with more information about specific British Standards relating to areas of study. Many courses require you to have some knowledge about the Standards used by relevant businesses. Some Standards, such as quality management systems (ISO 9001), are relevant to most businesses, from small companies to international enterprises. Other Standards are very specific, for instance, guidance on designing a new household appliance that is safe, or giving specifications for testing a new prototype chair design.	
Year **(with number of participants)**		
Operation Summary	Online Information	
Textbook(Syllabus) or Curriculum Summary	Title	Higher Education
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**Standards and your course** Agriculture & Horticulture Building, Construction & Civil Engineering Designing for the disabled Engineering Environmental Management System Fashion & Textiles Information Security Management Systems Quality Management System

		Standards working with education Collaboration and Research Standards for Education E-learning & E-assessment Management Systems Safety, Risk, and Business Continuity **Standards in action** IJQS Educational Resources
	Weblink	http://www.bsieducation.org/Education/HE/subjects-standards/default.shtml

**** Researched and Prepared by the Project Editor***

**** Based on BSI website and information provided by Kim Edmondson (BSI)***

**** (Please contact following person for further information):***

Economy	UK
Org/Ministry	BSI Group Headquarters, 389 Chiswick High Road, London, W4 4AL, UK
Position	Education Executive
Name	Kim Edmondson
Phone, Email	T: +44 (0)20 8996 7534, F: +44 (0)20 8996 7091 E: kim.edmondson@bsigroup.com, www.bsieducation.com

D26. USA – Catholic University – Strategic Standardization (Annex.B #34)

Title (website)	Catholic University of America School of Engineering - Engineering Management Program Strategic Standardization
Operator (website)	Catholic University of America
Type	F4) Graduate Students (Engineering)
Learning Objectives	✓ The purpose of Strategic Standardization is to create, or enhance, a level of awareness for graduate engineering students concerning standards and the process of standardization. ✓ Standards have the potential to profoundly impact engineering practice. It is therefore of great importance that engineers have a basic understanding of standards and the process of standardization, the method(s) by which standards are created.
Year	
Operation Summary	Grading of the course ➢ Attendance and Participation (5%) : Class attendance and participation is an indispensable part of the course. We learn from each other in a collaborative effort. To receive the full benefit of the course, it is expected each student will attend all classes. In the event it becomes necessary for a student to miss class, the student is required to notify faculty of the reason for the absence. ➢ Class Presentation (5%): The class presentation must be a power point presentation which lasts from 10-15 minutes and is based upon the research paper. If the presentation is less than 10 minutes or more than 15 minutes, the grade for the presentation will be adjusted accordingly. ➢ Research Paper (90%): A student may select any research topic related to standards or standardization approved by faculty. The paper must be 15-20 pages in length and double spaced, not including title page, table of contents or

	attachments. Footnotes and citations must be appropriate for graduate research. The paper is due on the first day of examinations.	
Textbook(Syllabus) or Curriculum Summary	Title:	Strategic Standardization (CMGT 564 - 2007)
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**1. Global standards are a bridge to the future** • Global Standardization Overview (Purcell presentation (2007)) • Standards • Standardization **2. National Standards Policies** • National Standards Strategies Overview (Purcell Presentation (2007)) • Americas • Africa • Asia • Europe **3. United States Standardization System I (Organization, structure, procedures, process, and relationships between private & public sectors)** • U.S. Standardization System (ATIS Presentation by Jean-Paul Emard (2007)) • U.S. Standardization System (Purcell Presentation (2007)) • Private Sector • Public Sector **4. United States Standardization System II (Public Policy Structure)** • U.S. Standardization System (DOD Presentation by Joseph A. Delorie (2007)) • U.S. Standardization System (Purcell presentation (2007)) • United States Constitution • National Technology Transfer and Advancement Act • OMB Circular A-119 • Interagency Committee on Standards Policy **5. International Standardization Systems & Organizations** • International Standardization (ANSI Presentation by Gary Kushnier (2007)) • International Standardization (Purcell Presentation (2007)) **6. International Standards & Trade** • International Standards & Trade (NAM Presentation by William Primosch

		(2007)) • International Standards & Trade (Purcell presentation (2007)) • U.S. Department of Commerce & U.S. Trade Representative • World Trade Organization & United Nations **7. Legal & Ethics Issues** • Voluntary Standards, Safety & Regulatory Issues (David Schmeltzer presentation (2007)) • Law & Ethics (Purcell presentation (2007)) • Health, safety and the environment • Antitrust & trade regulations • Intellectual Property • Export Controls **8.Testing, Certification and Conformity Assessment** • Conformity Assessment (NIST Presentation by Gordon Gillerman (2007)) **9. Strategic Value of Standardization** • Overview (Purcell presentation (2007)) • Australia • Germany • United Kingdom • United States **10.Strategic Standards Management** • Overview (Purcell Presentation (2007)) **11.Class Presentations**
	Weblink	www.strategicstandards.com www.purcellfox.com

**** Submitted by (please contact following person for further information):***

Economy	USA
Org/Ministry	Chairman, Center for Global Standards Analysis, Washington, DC.
Position	
Name	Donald E. Purcell
Phone, Email	202/314-5232, 202/319-4459 FAX, donpurcell@strategicstandards.com

D27. USA – Faulkner Univ (Annex.B #35)

Title (weblink)	Computer Science Department Courses in Faulkner University	
Operator (website)	(website: www.faulkner.edu)	
Type (Target Groups)	F3) university undergraduate	
Learning Objectives	In this program, the audience (students) learn: Learning objectives for courses : INF 1320/1325/2340 & CSIS 3360 ✓ The student will gain an understanding of design elements and related to structuring information systems and services. ✓ The student will be introduced to a variety of design concepts such as usability and end-user, information navigation. ✓ The student will be introduced to a variety of design scenarios and understand the benefits and disadvantages of multiple design environments. ✓ Provide students with a solid foundation of HCI concepts and practices as outlined in the ACM SIGCHI's Curricula for Human-Computer Interaction. ✓ Introduce issues specific to website development: color, typography, multimedia, accessibility, globalization, and trust. ✓ Provide self-reliance and confidence in the ability to solve problems.	
Year (with number of participants)	✓ 2006-2007 : 10-15 students	
Operation Summary		
Textbook(Syllabus)	Title	*(language :)*

or Curriculum Summary	Authors, Publisher, Year	Stone etal. *User Interface Design and Evaluation*, Morgan Kaufman, 2004 ; Krug, *Don't Make Me Think*, New Riders, 2006 ; Johnson, *Web Bloopers*, Morgan Kaufman, 2003 ; McCracken, *User-Centered Website Development: A Human-Computer interaction Approach,* Pearson Prentice Hall, 2004
	Table of contents (curriculum or Syllabus)	Syllabi for these courses (relevant pages) will be attached as addendum to this survey.
	Weblink	

**** Submitted by (please contact following person for further information):***

Economy	United States of America
Org/Ministry	Faulkner University
Position	Professor of Informatics
Name	Brenda G. Turner, Ph.D.
Phone, Email	334-386-7575; bturner@faulkner.edu

D28. Malaysia – Training of Teacher/Educator (Annex.B #37)

Title (weblink)	Training – Awareness for Teaching Professionals on Importance of Standards for Safety of Consumers
Operator (website)	Malaysian Association of Standard Users (website: www.standardusers.org)
Type (Target Groups)	P7) Teachers (primary/secondary schools)
Learning Objectives	In this program, the audience (students) learn : ✓ To equip potential trainers with the awareness on standards in ensuring safety of consumer products and services ✓ To provide potential trainers with the knowledge in order to instill the importance of standards in the minds of students (young consumers) or participants of training sessions ✓ To provide potential trainers with th ideas/materials to develop teaching aids to make the learning of standards fun
Year (with number of participants)	✓ 2006 (x3) – 100 participants
Operation Summary	✓ Approximately, 60 teachers were identified & selected by the States/District Department of Education and schools to participate in each training session ✓ Participants took part in group activities, then encouraged to devise lesson plans/activities for their own sessions on standards in schools ✓ Content outline – trainers were required to prepare examples of materials, dmos, games, etc to be used for training ✓ Topics covered ■ Introduction on standards & standardization ■ National Standards Development & Infrastructure ■ Standards for safety of consumer product & services ■ Activities; how to make the subject interesting; ideas & materials to enhance understanding?

Textbook(Syllabus) or Curriculum Summary	Title	Young Consumers & Standards Activity Book *(language English & Mala)*
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	1) Introduction 2) The Malaysian Standards (MS) Mark 3) International Organisation for Standardisation (ISO) 4) ISO's Partner – IEC (International Electrotechnical Commission) 5) What are standards 6) Standards in our daily life 7) Why do we need standards? 8) Who are consumers ? 9) What do consumer want ? 10) Final assessment 11) Games 12) Standards associations 13) Standards in Malaysia 14) The story of ISO & IEC
	Weblink	

**** Submitted by (please contact following person for further information):***

Economy	Malaysia
Org/Ministry	Department of Standards Malaysia
Position	Assistant Director of Standards
Name	Wan Azrin Izani bin Wan Mohd Zain/ Shahnaz Rakhmat
Phone, Email	+603-8885 8822/ 8181, wazrin@standardsmalaysia.gov.my/ shahnaz@standardsmalaysia.gov.my

<Annex D29 to D80>

Detailed Fact Sheets for Professional Education Practices

D29. Australia – Standards Australia – Training Seminar (Annex.B #38)

Title (weblink)	Training Seminar on Standards and Technical Regulation for Gulf Standards Organization's (GSO) Staff and Committee Members
Operator (website)	Standards Australia (website: www.standards.org.au)
Type (Target Groups)	P5) GSO's Project Managers and committee members participating in the preparation of national standards
Learning Objectives	In this program, the audience (students) learn : The objective of the training is to equip participants with the knowledge of national and international standardization procedures and practices at level where they can effectively participate in, or manage, consensus standards development activities.
Year (participants)	February 2006 (28 participants)
Operation Summary	The benefits of the course were aimed to achieve the following goals: ✓ improve the efficiency of standardization activities in the region ✓ promote a better understanding of how technical regulation and standardization can work together to deliver solutions to improve market efficiency in the region ✓ facilitate national standards committees to operate in a more effective manner ✓ allow delegates from the region to have a greater influence in international standardization activities
Textbook	N/A

**** Submitted by (please contact following person for further information):***

Economy	Australia
Org/Ministry	Standards Australia
Position	International Team Manager
Name	Max Maffucci
Phone, Email	+61 2 8206 6710; max.maffucci@standards.org.au

D30. Australia – Standardization Training (Annex.B #39)

Title **(weblink)**	'Standardization training' – One week course (weblink: n/a)
Operator **(website)**	Joint activity: Standards Australia and Standards New Zealand (website: www.standards.org.au and www.standards.co.nz)
Type **(Target Groups)**	P5) For individuals involved in Standards development (Including Project Managers and Managers)
Learning **Objectives**	In this program, the audience (students) learn : ✓ Standards and conformance overview ✓ Standardization processes ✓ Preparing and holding meetings (national and international) ✓ Preparing standards (what to include and not to include) ✓ Standards in legislation
Year **(participants)**	✓ October 2006 (1 participant) ✓ February 2007 (1 participant) ✓ May 2007 (1 participant)
Operation **Summary**	Open for people involved in work of a National Standards Body Full five day course (including a Field Trip) Flexibility in specific course design to suit the individual
Textbook	N/A

**** Submitted by (please contact following person for further information):***

Economy	Australia (and New Zealand)
Org/Ministry	Standards Australia (and Standards New Zealand)
Position	Manager, International Development
Name	Karen Hitchiner
Phone, Email	+64 4 498 5945; Karen.hitchiner@standards.org.au

D31. Brunei – CPRU training (Annex.B #40)

Title (weblink)	Training on Standards development/International Standardization *note: The workshop is conducted based on training materials/models provided by the ASEAN+Australia Development Cooperation Programme (AADCP)
Operator (website)	CPRU
Type **(Target Groups)**	P3/P4/P5
Learning **Objectives**	In this program, the audience (students) learn : ✓ Development of National Standards ✓ Adoption of Standards ✓ International Standardization Activities
Year (participants)	✓ 2006 – 40 participants
Operation **Summary**	✓ Workshop
Textbook	N/A

**** Submitted by (please contact following person for further information):***

Economy	Brunei Darussalam
Org/Ministry	CPRU - Ministry of Development
Position	Executive Engineer
Name	Rosalind Khan
Phone, Email	+673-2381724 /modcpru@brunet.bn

D32. Canada – SCC – Build a Better Understanding of ISO (Annex.B #41)

Title (weblink)	Build a Better Understanding of the International Organization for Standardization (ISO) (website: www.scc.ca/en/participate/training/build_iso.shtml)	
Operator (website)	Standards Coucils of Canada (website: www.scc.ca)	
Type (Target Groups)	• Members of technical committees, subcommittees, task and/or working groups • Council and advisory committee members, particularly Canadian National Committee for ISO (CNC/ISO) • Anyone involved or interested in standards development or conformity assessment	
Learning Objectives	Designed to provide an overview of the role, responsibilities and structure of ISO and its functions in the development of international standards.	
Year (participants)		
Operation Summary	The benefits of the course were aimed to achieve the following goals: ✓	
Textbook(Syllabus) or Curriculum Summary	Title	Build a Better Understanding of the International Organization for Standardization (ISO)
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What to expect** An interactive workshop offering peer learning and group participation. Information and course content includes practical exercises to reinforce learning. **Workshop objectives** • Identify the key components of the ISO structure • State the responsibilities of the Council, the Central Secretariat and the Technical Management

		Board • List the objectives and mandate of SCC • Define the scope of both technical committees and technical advisory groups • Identify National Standards System stakeholders and their roles • Identify the role of the Joint Technical Committee on Information Technology • State the need for international standardization • Define the term consensus and how it used in the international arena • List the development stages of an ISO standard • Describe the key processes of each development stage in an ISO standard • Identify the linkages between SCC and ISO • Identify ISO's international and regional partners • List the different types of ISO publications
	Weblink	http://www.scc.ca/en/participate/training/build_iso.shtml

**** Submitted by (please contact following person for further information):***

Economy	Canada
Org/Ministry	Standards Council of Canada
Position	Coordinator Member Program
Name	Nicole Bosiak
Phone, Email	613-238-3222 Ext.468 nbosiak@scc.ca

D33. Canada – SCC – Build a Better Understanding of IEC (Annex.B #42)

Title **(weblink)**	Build a Better Understanding of the International Electrotechnical Commission (IEC) (website: www.scc.ca/en/participate/training/build_iec.shtml)	
Operator **(website)**	Standards Coucils of Canada (website: www.scc.ca)	
Type **(Target Groups)**	• Members of technical committees, subcommittees, task and/or working groups • Council and advisory committee members, particularly the Canadian National Committee for IEC (CNC/IEC) • Anyone involved or interested in standards development or conformity assessment	
Learning Objectives	Designed to provide an overview of the role, responsibilities and structure of IEC and its functions in the development of international standards.	
Year (participants)		
Operation Summary	Duration: 1 Day Attendance requirements: minimum of 15 / maximum of 25	
Textbook(Syllabus) or Curriculum Summary	Title	Build a Better Understanding of the International Electrotechnical Commission (IEC)
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What to expect** The interactive workshop incorporates peer learning and group participation. Information and course content include practical exercises to reinforce learning. **Workshop objectives** • Identify the key components of the IEC structure • State the responsibilities of the Council, the

		Council Board and Executive Committee • List the functions of the Standardization Management Board • List the objectives and mandate of SCC • Define the scope of both a technical committee and a subcommittee • List the functions of the Conformity Assessment Board • Identify National Standards System stakeholders and their roles • Identify the role of the Joint Technical Committee on Information Technology • State the definition of an international standard • Define the term consensus used in the international arena • List the development stages of an IEC standard • Describe the key processes of each development stage in an IEC standard • List the different types of IEC publications • Identify the linkages between SCC and IEC • Identify IEC's international and regional partners
	Weblink	www.scc.ca/en/participate/training/build_iec.shtml

**** Submitted by (please contact following person for further information):***

Economy	Canada
Org/Ministry	Standards Council of Canada
Position	Coordinator Member Program
Name	Nicole Bosiak
Phone, Email	613-238-3222 Ext.468 nbosiak@scc.ca

D34. Canada – SCC – Discover SCC (Annex.B #43)

Title **(weblink)**	Discover the Standards Council of Canada (website:www.scc.ca/en/participate/training/discover_workshop.shtml)	
Operator **(website)**	Standards Coucils of Canada (website: www.scc.ca)	
Type **(Target Groups)**	• Members of technical committees, subcommittees, task and/or working groups • Council and advisory committee members • Anyone involved or interested in standards development or conformity assessment	
Learning Objectives	Designed to offer a more thorough knowledge and understanding of SCC's mandate and objectives, its role in the National Standards System and its link to international forums	
Year **(participants)**		
Operation Summary	• Duration: 1 day • Attendance requirements: Minimum 15, maximum 25	
Textbook(Syllabus) or Curriculum Summary	Title	Discover the Standards Council of Canada
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What to expect** The interactive workshop incorporates peer learning and group participation. Information and course content include practical exercises to reinforce learning. **Workshop objectives** • List the objectives and mandate of SCC • State SCC's accreditation activities and programs • State SCC's involvement with international

		forums • List the goals of standardization within Canada • Identify SCC's trade initiatives and partners • List the Branches and divisions of SCC • Identify the scope of work and responsibilities of SCC Branches and divisions • List key Advisory Committees of SCC • Identify National Standards System stakeholders and their roles • Identify different types of standards • State what a Canadian Procedural Document is and where it is used • Define the term consensus and how it is used • List criteria in the development of a national standard • Identify SCC's conformity assessment system • Identify SCC's national, international and regional links
	Weblink	www.scc.ca/en/participate/training/discover_workshop.shtml

**** Submitted by (please contact following person for further information):***

Economy	Canada
Org/Ministry	Standards Council of Canada
Position	Coordinator Member Program
Name	Nicole Bosiak
Phone, Email	613-238-3222 Ext.468 nbosiak@scc.ca

D35. China – SAC – Standardization Knowledge (Annex.B #45)

Title (weblink)	Training Course on International Standardization Knowledge	
Operator (website)	(website:www.sac.gov.cn)	
Type (Target Groups)	B	
Learning Objectives	In this program, the audience (students) learn : ✓ Technical work procedures of ISO/IEC ✓ International trade and standardization ✓ Rules for the structure and drafting of international standards ✓ IRP and standards ✓ Practical operation on ISO/IT tools	
Year (participants)	✓ 2006(120 students from national technical committee, enterprises, and local government) ✓ 2007(120 (120 students from national technical committee, enterprises, and local government))	
Operation Summary		
Textbook(Syllabus) or Curriculum Summary	Title	1.Course on international standardization(Chinese and English version) 2.Guide book on enterprises participating in international standardization activities
	Authors, Publisher, Year	1.2004 2.2006
	Table of contents (curriculum or Syllabus)	1. Origin and development of international standardization. 2. Structure and bodies of international standardization. 3. Definition, types, and effects of international

		standard. 4. Technical work procedures of ISO/IEC 5. Rules for the structure and drafting of international standards 6. IRP and standards etc……
	Weblink	

**** Submitted by (please contact following person for further information):***

Economy	P.R.China
Org/Ministry	Standardization Administration of China
Position	Deputy Director
Name	LI Dongfang, Du Chunjing
Phone, Email	lidf@sac.gov.cn，dchj@cnca.gov.cn

D36. Hong Kong – HKIE and HKPC (Annex.B #46)

Title (weblink)	Materials Science and Technology in Engineering Conference - Session on "Standards Development International Practice and Hong Kong Perspective" (weblink: http://www.hkpc.org/hkiemat/mastec_2005.htm http://www.hkpc.org/hkiemat/mastec_2007.htm)	
Operator (website)	Organisers : The Hong Kong Institution of Engineers and The Hong Kong Productivity Council Supported by : The Commerce, Industry and Technology Bureau, HKSARG (website: http://www.hkie.org.hk/ , http://www.hkpc.org/html/eng/common/index.jsp , http://www.citb.gov.hk/)	
Type (Target Groups)	P6 (Multi-targets or Unspecified parties)	
Learning Objectives	In this program, the audience (students) learn : Standards Development Section on "Construction Standard Development in Hong Kong" ✓ Services provided by the PSIB, ITC in relation to standards and conformance ✓ Stages in the development of international standards ✓ Experience in other places, e.g. EU and US ✓ Principles of standardisation	
Year (participants)	✓ 2005 – >150 ✓ 2007 – to be held on 13 -1 5 Jun 2007	
Operation Summary	✓ The conference is open to all parties interested.	
Textbook(Syllabus) or Curriculum Summary	Title	
	Authors, Publisher, Year	

	Table of contents (curriculum or Syllabus)	
	Weblink	

**** Submitted by (please contact following person for further information):***

Economy	HKC
Org/Ministry	PSIB, ITC
Position	/
Name	/
Phone, Email	psib@itc.gov.hk

D37. ISO - E-lerning Program (Welcome to Southistan) (Annex.B #48)

Title **(weblink)**	ISO E-learning Programme – Expert in International Standardization Management (Welcome to Southistan) (website:)	
Operator **(website)**	ISO (website:)	
Type **(Target Groups)**	Three main target groups ✓ Learners in higher education environment(HE) ✓ ISO members' staff, particularly in developing countries (MB) ✓ Experts in ISO's technical work (TE) First priority: MB target group-develop or extend competences to support national interests in international standardization(ISO members' staff, particularly in developing countries)	
Learning **Objectives**	<u>In this program, the audience (students) learn :</u> ✓ Assessing priorities for standardization ✓ Managing participation in international standardization ✓ Implementing International Standards	
Year **(participants)**		
Operation **Summary**	✓	
Textbook(Syllabus) **or Curriculum** **Summary**	Curriculum 1	Module 1 (planning a standardization strategy)
	Authors, Publisher, Year	 2006

	Table of contents (curriculum or Syllabus)	✓ Analyzing and defining fields of national interest ✓ Evaluating strategic alternatives (such as adoption of published International Standards or participation in the standards development process); ✓ Assessing potential stakeholders' participation; and ✓ Estimating resources needed to support the process
	Weblink	
	Curriculum 2	Module 2 (participation in international standardization)
	Authors, Publisher, Year	2006
	Table of contents (curriculum or Syllabus)	✓ Concretely applying procedures for standards development work ✓ Practicing with tools supporting the process ✓ Dealing with consensus-building and the promotion of national positions on specific content issues
	Weblink	
	Curriculum 3	Module 3 (adoption and implementation of International Standards at the national level)
	Authors, Publisher, Year	2006
	Table of contents (curriculum or Syllabus)	Module 3 lasts about 12 weeks, with students supposed to work approximately one hour per day. Learners play the role of technical officers, with the assignments due to their chief, SBS' technical director, Dr. Samina Khan. The module is divided into five main tasks covering the following topics:

		✓ Task 1: Ensuring compliance with ISO Guide 21 ◆ Sub-task 1.1 : Making recommendations on standards adoptions ◆ Sub-task 1.2 : Responding to stakeholder feedback ◆ Sub-task 1.3 : Providing publication advice ✓ Task 2 : Preparing a PR presentation ✓ Task 3 : Responding to requests from stakeholders ◆ Sub-task 3.1 : Responding to Mr. Karim, Director of Heavy Industries and Trading (Business case covering the Earth moving machinery sector) ◆ Sub-task 3.2 : Responding to Mr. Kadir, CEO of National STEEL Corp. (Business case covering the Oil and Gas sector) ◆ Sub-task 3.3 : Responding to Mr. Habibi, Techincal Director of Habibi Values (Business case covering the Oil Gas sector) ✓ Task 4 : Outlining a training programme ✓ Task 5: Developing a stakeholder survey
	Weblink	

**** Prepared by the Project Editor***

****Based on ISO Focus 2007 Nov issue and ICES 2nd Workshop proceedings***

D38. ISO – Training Services in Stadards Development (Annex.B #49)

Title	ISO Training Services in Standards Development (www.iso.org)	
Operator (website)	ISO CS (website:http://www.iso.org/iso/about/training_at_iso.htm)	
Type **(Target Groups)**	P7 ISO Member Bodies Staff P4 Standards Development – participating experts	
Learning **Objectives**	Our courses focus on the transfer of knowledge and refinement of skills needed to deal with the complex requirements associated with International Standards development, production and dissemination.	
Year (participants)		
Operation Summary	Please visit ISO website	
Textbook(Syllabus) **or Curriculum** **Summary**	Title:	ISO Training Services in Standards Development
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	List of Training Courses The following courses are offered: **ISO Project management** • recalling the goals of ISO and international standardization; • explaining basic project management notions and their relevance to standards development ; • describing the 'special' aspects of proactive project management in ISO; • describing in detail the application of the ISO procedural methods, providing insights and short-cuts relating to the 'due process' associated with standards development. • The course also includes overviews of aspects of writing standards as they relate to the role of secretariat/secretary, but not as they affect the actual writing of an ISO publication and of ISO's e-services (these two latter aspects are the subjects of more extensive courses for those requiring deeper understanding) **Using the ISO STD template: practical tips** Day1 morning: Editorial tools available on the ISOTC Portal site and introduction to the ISO STD template. Day1 afternoon and Day 2: ISO STD template course and workshop with exercises (includes hands-on use of the template under the supervision of the instructor): • creating an International Standard skeleton

		document using the ISO STD template (Doc.Info, STD toolbar); • framework elements for building the skeleton document including title, scope, terms and definitions, annexes, bibliography; • styling clauses and subclauses with and without titles; • lists and other elements (notes, warning notices, examples, etc.); • tables and figures; • symbols, units and equations (equation editor); • how to handle documents made with older versions of the ISO templates. a) attaching the template to documents prepared with the newer version ISO STD 2.1, 2.0 and 1.0; b) treating documents prepared with the oldest versions ISO STD 30 and 33. **Writing ISO standards** **Session 1 – General presentation** Drafting and editing: • the roles of TC/SC secretaries ; project editors and the ISO Central Secretariat; • tools for drafting and editing. The *ISO/IEC Directives*, Part 2: • general principles; • drafting rules for title, foreword, verbal forms, scope, references, terms and definitions, notes, annexes, units and symbols, tables and figures. **Session 2 – Coverage of specific topics upon request** • Elaboration on the editorial rules described during the general presentation. • Explanation of some specific rules not covered during the general presentation. • Description of the main editorial pitfalls and how to avoid them. • Presentation of the editorial tools available on the ISOTC Portal site and introduction to the ISO STD template. • Presentation of the ISO Central Secretariat's internal processes and requirements. • Individual coaching of project leaders on the basis of their documents. **Preparing graphics** Technical aspects of graphic files preparation: • file formats; • photographs and use of colours graphs; • ISO Central Secretariat technical requirements and guidelines. Editorial aspects of graphics preparation: • general principles; • editorial rules. **ISO e-services**

		• Understanding the various types of ISO e-services available on ISO Online. • How to access and download ISO policy documents and other general documents available on ISODOC. • How to access and download published standards and draft standards including bibliographical data on ISO's publications available on the ISOSTD server. • Understanding the supporting collaborative work by ISO committees available on ISOTC. • Understanding the content of guidance documents for standards developers available on the ISOTC Portal site. • Whom to contact in case of problems. **ISO global directory** • Understanding the functions and services of the global directory. • How to register new users and to update existing users. • How to assign a user to a role for an entity (a committee or a working group). • How to register a user to a balloting role. • Understanding the difference in registration between centralized and decentralized balloting roles. **ISOTC server and e-balloting** • Understanding the electronic environment developed for ISO committee work, understanding the principles of folder organization, being able to use the main types of objects in Livelink (folders, documents, aliases, URLs, etc.), • Committee internal balloting • How to download and move documents, register users, committee internal balloting; how to set notifications and send ad hoc notifications, establish discussion fora. • Understanding the various functions of the balloting application and how to identify ballots for which the member body has an obligation to vote and whether it has already met its obligations; downloading ballot documents, including bulk download; searching for ballots based on document or committee reference numbers; searches based on time-ranges; access to ballot results and comments of closed ballots; understanding the difference between a centralized and a decentralized balloting role and other roles which are supported by the balloting application. **Enhanced participation in international standardization** ISO structure and major policy issues • Overview of ISO. • ISO history. • Relationship with other standardization bodies.

		• Structure. • ISO Strategic Plan 2005 – 2010. Process of producing an international standard • ISO/IEC standards development process. • Introduction to Part 1 of the Directives. • Significance of the different stages in the process. • TCs/SCs and WGs. • Privileges and obligations of ISO member bodies. Role of the ISO member in the production of standards • Organizing local mirror committees and managing their input into the international process. • Adoption of international standards. • Levels of alignment (IDT, MOD,NEQ) – Guide 21. • Presentation and publication issues. • Access to files of published standards for ISO members. • How to deal with other ISO deliverables. • Hosting ISO meetings. • Draft International Standards. • Twinning. ISO tools • Secretariats using ISO Livelink. • Secretariats using other Web sites for document management. • Commenting and voting on committee documents (new work items, committee drafts etc.). • Electronic commenting and voting Draft International Standards and Final Draft International Standards. Role of the individual in the production of standards • Attending ISO meetings as a national delegate. • Twinning. • Understanding ISO tools in support of the international standardization process. **Expert in international standardization (e-learning course)** • Assessing priorities for standardization. • Managing national participation in international standardization. • Support of national adoption and implementation of standards.
	Weblink	http://www.iso.org/iso/about/training_at_iso.htm

**** Prepared by the Project Editor***

****Based on ISO website***

D39. Korea – KSA course Type 1 – Basics (Annex.B #50)

Title	Standardization Courses – Type 1: Introduction and Basics	
Operator (website)	KSA (website:www.ksa.or.kr)	
Type	P1 Business (Association) - Executives/ Managers p2 Business (Association) - Working-level Staff	
Learning Objectives	In this program, the audience (students) learn :	
Year (participants)	1998-2007 (about 500 participants for ten years)	
Operation Summary	Duration : Two Days	
Textbook(Syllabus) or Curriculum Summary	Title	Standardization Courses – Type 1: Introduction and Basics
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	1. Introduction to the Standardization • The Role, Definition, and Effect of Standardization/ foreign systems concerning standardization 2. Industrial Standardization • Industrial Standardization Systems/ the improvement policy of Industrial Standardization 3. Understanding of the activities of International Standardization • International Organization for Standardization/ the necessity of International Standardization • The activities of main committees of International Organization for Standardization 4. Trade of WTO/TBT • The background of establishment/ technical barriers to trade • Relevance between International Standardization and Trade/ the activities and expected roles of KSA 5. Company Standardization • The Objective and Effect of Company

		Standardization/ methods of processing Company Standardization 6. Relevance Feedback • The concept and procedures of Relevance Feedback/ current trends of Relevance Feedback System in Korea • Assessment System of main countries 7. Standards and Intellectual Property Rights • Intellectual Property Rights/ • Intellectual Property Policy for main institutes for standardization • Related precedent cases 8. Case Study of Business Standardization • Standardization Strategies of Samsung • Standardization Strategies of LG 
	Weblink	

**** Prepared by the Project Editor***

****Based on KSA internal documents***

D40. Korea – KSA course Type 2 – Internatinal Practice (Annex.B #51)

Title	Standardization Courses – Type 2: International Prtices	
Operator (website)	KSA (website:www.ksa.or.kr)	
Type (Target Groups)	P1 Business (Association) - Executives/ Managers p2 Business (Association) - Working-level Staff	
Learning Objectives	In this program, the audience (students) learn : ✓	
Year (participants)	1998-2007 (about 300 participants for ten years)	
Operation Summary		
Textbook(Syllabus) or Curriculum Summary	Title	Standardization Courses – Type 2: International Prtices
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	1. The Importance of International Standardization • The Importance of Applying International Standardization 2. Standardization Strategies of Developed Countries • Standards Policy for Industrial Power of 21st Century 3. Cooperation between International Organizations and International Organization for Standardization • Case Study of APEC-ISO Cooperation 4. Main Activities of Korean Committee Attending International Standardization Commission • Holding and Preparation of International Standardization Commission 5. Roles of International Standardization Experts: Secretary • Necessary Resources of Secretary Institute/ Roles and requirements of

		Secretary 6. Successful Cases of Processing Standardization • From NP to IS/ Successful Strategies 7. Development Procedures of International Standards • Initiation of Processing Projects/ Procedures of Developing ISO/IEC Standards • Development of Documents(TS/TR/PAS) • Roles of Rapporteur/ Processing Procedures of Questions 8. De facto Standards • Concepts of De facto Standards/ Main International Organizations for De facto Standardization (IEEE etc.) 9. Case Study of Filling NP • Organization of Documents • Making the First Draft • Preliminary Informative Factors/ General Normative Factors • Descriptive Normative Factors/ Additional Normative Factors
	Weblink	

**** Prepared by the Project Editor***

****Based on KSA internal documents***

D41. Korea – KSA course Type 3 – Communication (Annex.B #52)

Title	Standardization Courses – Type 3: English Communication	
Operator (website)	KSA (website:www.ksa.or.kr)	
Type **(Target Groups)**	P1 Business (Association) - Executives/ Managers P2 Business (Association) - Working-level Staff P4 Standards Development- Participating Experts	
Learning Objectives	In this program, the audience (students) learn :	
Year (participants)	2006-2007, (about 100 participants for two years)	
Textbook(Syllabus) or Curriculum Summary	Title	Standardization Courses – Type 3: English Communication
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	1. Introduction to Meeting Process and Communication • Hierarchy and functions of International Organization for Standards • Processing Methods of Documents in relation to International Standardization Commission • How to Conduct a meeting and get a right to speak 2. International Standards-Writing Skills • How to Access and Fill in ISO Template 3. Practical English for C-HoD and Plenary Meeting • Opening of Plenary Meeting • Roll Call of Delegates 4. How to Communicate to Process an International Standards • JTC1/SC24 • ISO/TC204 5. Inter-cultural Understanding and Successful Communication • Understanding Variability depending on Each Culture • Successful Negotiation Strategies and tactics of each nation 6. English Presentation: Strategy and Expressions • Presentation Strategy and Expression in case of International Standardization Commission

**** Prepared by the Project Editor***

****Based on KSA internal documents***

D42. Korea – KSA course Type 4 – Writing Standars (Annex.B #53)

Title	Standardization Courses – Type 4: Writing Standards	
Operator (website)	KSA (website:www.ksa.or.kr)	
Type (Target Groups)	P5 Standards Development - Chair/Secretariat/et al	
Learning Objectives	In this program, the audience (students) learn : ✓	
Year (participants)	2006-2007 (about 100 participants for two years)	
Operation Summary		
Textbook(Syllabus) or Curriculum Summary	Title	Standardization Courses – Type 4: Writing Standards
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	1.Traceability and Uncertainty 2.System of SI Units 3.Establishing Reference Numbers and Rounding the Numerical Value 4.Writing Skills of Documents
	Weblink	

**** Prepared by the Project Editor***

****Based on KSA internal documents***

D43. Korea – TTA – IT Standardization Course (Annex.B #54)

Title (weblink)	TTA – IT International Standardization Course(Korean) (weblink: http://www.tta.or.kr/Home2003/standards/standMeetingList.jsp)	
Operator (website)	TTA(Telecommunications Technology Association) (website: www.tta.or.kr)	
Type (Target Groups)	P6) Multi-targets or Unspecified parties	
Learning Objectives	✓ To learn theoretical background and Practical skills for international standardization activities	
Year (participants)	✓ 2004 (148 participants, two times) ✓ 2005 (169 participants, two times) ✓ 2006 (99 participants, two times) ✓ 2007 (planning two times)	
Operation Summary	✓ Once in Seoul, another in outside of Seoul ✓ Distance learning is planned and the online contents are under development	
Textbook(Syllabus) or Curriculum Summary	Title	Guide to Information Technology Standardization Activity *(Korean)*
	Authors, Publisher, Year	Mr. CHO, et al (7 co-authors) Telecommunications Technology Association, 2006
	Table of contents (curriculum or Syllabus)	PART 1: Communication strategy for international standardization meeting PART 2: How to access and use information of SDOs PART 3: How to prepare a new proposal and draft standards for IETF PART 4: Introduction to ITU-T 현황 and Tips for

		its standardization activity PART 5: How to prepare and speak in international standardization meeting PART 6: English for International meeting – for speakers and chairs
	Weblink	N/A

**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	TTA (Telecommunications Technology Association)
Position	Deputy General Manger
Name	Mr. Sungpil YU
Phone, Email	82-31-724-0113, spyu@tta.or.kr

D44. Singapore – SPRING – New Singapore Standards (Annex.B #59)

Title **(weblink)**	Seminar Launch of new Singapore Standards (http://www.standards.org.sg)
Operator **(website)**	SPRING Singapore (http://www.standards.org.sg)
Type **(Target Groups)**	P1, P2 and P3
Learning **Objectives**	In this program, the audience (students) learn : ✓ Overview of the new standard. ✓ Regulatory requirements related to the new standard. ✓ Case Studies of the new standard.
Year **(participants)**	✓ 2006 (8 seminar launches. Participants ranging from 100 to 400)
Operation **Summary**	✓ Open to all.
Textbook	N/A

**** Submitted by (please contact following person for further information):***

Economy	Singapore
Org/Ministry	SPRING Singapore
Position	Senior Manager
Name	Winston Wong
Phone, Email	+65 62791825, winston_wong@spring.gov.sg

D45. Taipei Chinese – NII course (Annex.B #60)

Title (weblink)	National Promotion Platform for Standardization Intelligence (http://www.standards.org.tw/)	
Operator (website)	National Information Infrastructure Enterprise Promotion Association (http://www.nii.org.tw)	
Type (Target Groups)	Medium-level executives of interested parties	
Learning Objectives	The importance and economic value of standards/standardization in business activities and strategic planning.	
Year (participants)	500-600 persons/year	
Operation Summary	Certificate will be issued	
Textbook(Syllabus) or Curriculum Summary	Title	Fundamentals of Standards (Chinese)
	Authors, Publisher, Year	Handouts only
	Table of contents (curriculum or Syllabus)	Basics of standards, standardization, conformity assessment, CNS mark, national standard system, and industrialized nations' standard systems.
	Weblink	http://www.standards.org.tw/edu.asp

**** Submitted by (please contact following person for further information):***

Economy	Chinese Taipei
Org/Ministry	National Information Infrastructure Enterprise Promotion Association
Position	Deputy CEO
Name	Eho-Cheng Lo
Phone, Email	ecl31@nii.org.tw

D46. Taipei Chinese – Laboratory Director Training (Annex.B #65)

Title (weblink)	Testing Laboratory Director Training (weblink:http://service.taftw.org.tw/training/trainCourse_sign1.aspx?tcoCode=TAF-TH96007)	
Operator (website)	TAF (website: service.tafw.org.tw)	
Type (Target)	P2) Business (Association) Working-level Staff	
Learning Objectives	In this program, the audience (students) learn : ✓ The requirements of accreditation and how to prepare for the planning ✓ To become fluent in ISO/IEC 43 and common standards ✓ How to do the work of a testing lab director	
Year (participants)	✓ 2007（140 participants in 4 classes）	
Operation Summary	✓ Each class accommodates 35 participants and lasts for 2 days. ✓ 1 class per season ✓ This is a typical class concerning standards and conformance.	
Textbook(Syllabus) or Curriculum Summary	Title, Author	N/A
	Table of contents (curriculum or Syllabus)	✓ Accreditation requirements and preparation ✓ Introduction to ISO/IEC 43 ✓ Measurement uncertainty ✓ Evaluation & Accrediation real business ✓ Common standards
	Weblink	

**** Submitted by (please contact following person for further information):***

Economy	Chinese Taipei
Org/Ministry	Taiwan Accreditation Foundation（TAF）
Position	
Name	Ms. Miaw Chyng Chen
Phone, Email	+886-2-2391-4626 extension 29，training@tafw.org.tw

D47. Thailand – TISI (Annex.B #67)

Title 1 **(weblink)**	The Project in Promotion of Industrial Standards, Enhancement of Quality of Life, Protection of Consumers' Right (weblink: www.tisi.edutainmentthai.com)
Operator **(website)**	Thai Industrial Standards Institute (website: www.tisi.go.th)
Type(Target Groups)	P2) Government officials
Learning Objectives	✓ To give knowledge and understanding of the significance of standardization to local government officers and consumers so that they are able to protect their rights to consume standards products
Year **(participants)**	✓ 2006 (905 participants in 280 organizations) ✓ 2007 (operating)
Operation Summary	✓ organizing meetings to develop seminar programs and manuals ✓ developing manual and medias for public release such as VCD and posters ✓ organizing seminars for local government officers ✓ summarizing and evaluating the outcomes of the project

**** Submitted by (please contact following person for further information):***

Economy	Thailand
Org/Ministry	Standardization Promotion and Development Division Thai Industrial Standards Institute (TISI) Ministry of Industry
Position	Director
Name	Ms. Chaowalee Ratanamungmeka
Phone, Email	(66 2) 202 3427 chaowlee@tisi.go.th

D48. Thailand – TISI – Increasing Manufacture's Capacity (Annex.B #68)

Title (weblink)	The Project on Increasing Manufacturers' Capacity of Production and Management System to International Standards Level
Operator (website)	Thai Industrial Standards Institute (website: www.tisi.go.th)
Type (Target Groups)	P1) Business Executives/Managers P2) Business Working-level Staff
Learning Objectives	✓ To promote and upgrade their manufacturing process and management system to meet international standard requirements ✓ To improve the capacity of laboratories to be recognised internationally and be capable of testing to relevant international standards ✓ To strengthen the ability of human resources in small and medium enterprises and local manufacturers to improve their manufacturing process and be aware of environmental management and safety standards
Year (participants)	✓ 2006 (2,022 participants), 2007 (operating)
Operation Summary	✓ developing the content of the course and training materials ✓ providing experts from TISI to give lectures or in some cases, outsourcing private sectors to undertake trainings ✓ organizing seminars for target group ✓ organizing seminars to evaluate the outcomes and to improve the upcoming courses
Textbook(Syllabus)	N/A

**** Submitted by (please contact following person for further information):***

Economy	Thailand
Org/Ministry	Standardization Promotion and Development Division Thai Industrial Standards Institute (TISI) Ministry of Industry
Position	Director
Name	Ms. Chaowalee Ratanamungmeka
Phone, Email	(66 2) 202 3427 chaowlee@tisi.go.th

D49. UK – BSI training course 1 (Annex.B #69)

Title **(weblink)**	BSI Committee member training course 1 An introduction to the standardization process (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee members Committee chairs
Learning **Objectives**	Give an understanding of BSI, British Standards and the principles and process of developing national, European and international standards. Provide a practical reference tool for use by committee chairs and members in their standards work.
Year **(participants)**	-2007
Operation **Summary**	• One day • This training is FREE to UK committee members.. • Course format: Presentation, Questions and answers

**** Prepared by the Project Editor***

****Based on BSI global website***

D50. UK – BSI training course 2 (Annex.B #70)

Title **(weblink)**	BSI Committee member training course 2 Drafting standardsDates (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Drafting-standards/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee members who will have a responsibility for producing drafts, such as project leaders and convenors.
Learning **Objectives**	The aim of this course is to raise awareness of good writing practices amongst those who have responsibility for drafting and developing technical information and standards. Provide a firm grounding in the principles of writing technical information. Develope an individual's ability to draft, review and edit technical documents and standards from inception to publication. Familiarize writers with national and international regulations within the standards field.
Year **(participants)**	-2007
Operation **Summary**	• Duration: Two days • Presentation • Workshop • Practical interactive exercises • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D51. UK – BSI training course 3 (Annex.B #71)

Title **(weblink)**	BSI Committee member training course 3 IEC and CENELEC today (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/IEC-and-CENELEC-today/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	UK committee members with an interest in electrotechnical standardization.
Learning Objectives	This course will provide a focused outline of specific procedures for committee members and others involved with standards work in the electrotechnical arena, building on knowledge developed through local departmental induction and on-the-job training. Understand the structure and activities of national committees. Appreciate the differences an similarities betweenInternational (IEC) and European (CENELEC) methods of working. Understand interaction between the national committee and IEC/CENELEC programmes.
Year **(participants)**	-2007
Operation Summary	• Duration: One day • Presentation • Case Studies • Interactive group exercise • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D52. UK – BSI training course 4 (Annex.B #72)

Title **(weblink)**	BSI Committee member training course 4 Influencing and persuading in the standardization environment (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Influencing-and-persuading-in-the-standardization-environment/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee members
Learning **Objectives**	As organizational structures flatten and employees become increasingly empowered, the ability to communicate and persuade colleagues and managers is even more important. Many can generate good ideas; persuading others to adopt them is another challenge. Gain the knowledge and confidence to influence. Develope practical skills to pass on a message clearly - to both individuals and groups..
Year **(participants)**	-2007
Operation **Summary**	• Duration: One day • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D53. UK – BSI training course 5 (Annex.B #73)

Title **(weblink)**	BSI Committee member training course 5 Legal aspects of standards (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Legal-aspects-of-standards/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee members
Learning **Objectives**	Committee members should be aware of the legal status of standards, such as discretionary and mandatory standards, new approach practices, restrictive trade practices, duty of care, trade description and the contractual use of standards. This course will provide training in these legal issues that are relevant to committee members. Provide information about the legal aspects of standard work. Bring about a greater awareness of potential legal problems.
Year **(participants)**	-2007
Operation **Summary**	• Duration: One day • The course will consist of tutor input and discussions. • Participants will work through a detailed case study, provided in advance by themselves where appropriate, and consider the given solutions to frequently occurring legal problems. • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D54. UK – BSI training course 6 (Annex.B #74)

Title **(weblink)**	BSI Committee member training course 6 Understanding European (CEN) procedures (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Legal-aspects-of-standards/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Experts and convenors of CEN working groups CEN technical committee chairs BSI committee members with interest in CEN
Learning **Objectives**	The aim of this course is to improve the participant's effectiveness in the European standardization process by explaining the processes and procedures involved. Identify the key aspects of CEN work. Explain the CEN operational procedures. Review case studies that illustrate typical, commonly occurring issues, with a view to anticipating and overcoming concerns.
Year **(participants)**	-2007
Operation **Summary**	• Duration: One day • Presentation • Group exercises • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D55. UK – BSI training course 7 (Annex.B #75)

Title **(weblink)**	BSI Committee member training course 7 Understanding international (ISO) procedures (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Understanding-international-ISO-procedures//)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	ISO technical committee chairs Convenors and experts of ISO working groups Committee members with interest in providing input to ISO work
Learning **Objectives**	This course is an introduction to the ISO structure to enhance participants' knowledge and understanding of the ISO procedures. Identify the key aspects of ISO work. Summarize and complete the material given in the booklet 'ISO Operational Procedures' with clarifications of any points arising (provided free). Consider appropriate case studies that illustrate commonly occurring issues.
Year **(participants)**	-2007
Operation **Summary**	• Duration: One day • Presentation • Group exercises • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D56. UK – BSI training course 8 (Annex.B #76)

Title **(weblink)**	BSI Committee member training course 8 Working across cultures (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Working-across-cultures/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee members operating on international committees or working groups Overseas experts
Learning **Objectives**	This course creates awareness and understanding of cultural differences and the problems that may arise in a meeting of mixed cultures. The workshop examines national characteristics and breaks down negative stereotypes. Delegates learn how to avoid frustration and other possible difficulties that could occur during international committee meetings. Understand how and why cultural differences influence a working environment. Gain insights into varying communication styles and business approaches - both in formal and informal environments.
Year **(participants)**	-2007
Operation **Summary**	• Duration: One day • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D57. UK – BSI training course 9 (Annex.B #77)

Title **(weblink)**	BSI Committee member training course 9 Awareness of environmental aspects in standardization (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Awareness-of-environmental-aspects-in-standardization/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee members and standardizers Committee secretaries Committee chairs
Learning **Objectives**	The course raises awareness of a 'best practice' approach to understanding the environmental aspects and components in standardization and the impact of these standards in the world. This course is of benefit to all standardizers and committee members involved in standardization. The course raises awareness of the key environmental impacts on business, trade and government. Follow the structure and elements of working with environmental aspects/components in standards. Discuss company 'pollution prevention strategies' and other case study examples. Practically apply how environmental impacts may be reduced. Obtain insights to recycled products and 'product lifecycle analysis' in various industries. Apply the numerous environmental reference docs and utilise the environmental checklist. Gain insight into the benefits of environmental standardization. Discuss the creation of environmentally sound products. Review the development and application of environmental components in standards.
Year	-2007
Operation **Summary**	• Duration: One day • Presentation • Questions and answers • Case studies • CEN checklist and templates • Group work and group discussions • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D58. UK – BSI training course 10 (Annex.B #78)

Title **(weblink)**	BSI Committee member training course 10 Chairing meetings (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/Chairing-meetings/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee members and chairs
Learning **Objectives**	This course aims to assist participants in leading meetings at work. The course examines aspects of the meeting, such as chairing, preparing for the meeting and closing the meeting. Increase the efficiency of meetings Lead and control meetings effectively Make effective contributions to meetings Deal with difficult people in the meetings environment.
Year **(participants)**	-2007
Operation **Summary**	• Duration: One day • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D59. UK – BSI training course 11 (Annex.B #79)

Title **(weblink)**	BSI Committee member training course 11 ISO Templates and Meetings (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/ISO-Templates-and-Meetings/)
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	New and existing committee members & Chairmen
Learning **Objectives**	The course will enhance participants' knowledge and understanding of the ISO procedures, enable the understanding of the ISO templates where they can be found and how they are used. Raise awareness of the best practice approach to the preparation of meetings. The course aims to develop a sound understanding of: The ISO development process Key stages in developing a standard Identifying participants Identifying actions Understanding the meeting procedures
Year **(participants)**	-2007
Operation **Summary**	• Duration: One day • This training is FREE to UK committee members.

**** Prepared by the Project Editor***

****Based on BSI global website***

D60. UK – BSI training course via e-learning (Annex.B #80)

Title **(weblink)**	BSI Committee member training via e-learning (www.bsi-global.com/en/Standards-and-Publications/Committee-Members/Committee-member-training-courses/E-learning-courses2/
Operator **(website)**	BSI (www.bsi-global.com)
Type **(Target Groups)**	Committee administrators
Learning **Objectives**	**eCommittees: Guide for Administrators** This course gives the Committee administrator (Committee Secretary) an understanding of the BSI eCommittees system and will aid in the transition between the current and updated system. It will provide a practical reference tool for administrators in their work on BSI eCommittees. **An introduction to BS 0** BS 0 specifies the role of BSI, as the UK national standards body, and that of its committee members in the preparation of standards of national origin and UK involvement with the international and European Technical Committee work programme. **eCommittees: Guide for Committee Members** This course gives the Committee Member an understanding of the BSI eCommittees system and will aid in the transition between the current and updated system. It will provide a practical reference tool for committee members in their work on BSI eCommittees. **An Introduction to the standardization process** This course provides committee chairs and members with a general introduction to the standardization process. It gives an overview of BSI and the role of committees and their members. **IEC CENELEC** This course will provide a focused outline of specific procedures for committee members and others involved with standards work in the electro-technical arena, building on knowledge developed through local departmental induction and on-the-job training.
Year	-2007
Operation **Summary**	

**** Prepared by the Project Editor***

****Based on BSI global website***

D61. USA – A2LA - Laboratory Training Series (Annex.B #81)

Title 1 (weblink)	A2LA (American Association for Laboratory Accreditation) Training Program 'Assessment of Laboratory Competence' (weblink: http://www.a2la.org/training/course_schedule.cfm)	
Operator (website)	A2LA (American Association for Laboratory Accreditation) (website: www.a2la.org)	
Type (Target Groups)	P7. Laboratory assessors and lead assessors, laboratory directors, laboratory managers, quality managers, and technical laboratory staff (please use 'Type' in question used in 2.1)	
Learning Objectives	<u>In this program, the audience (students) learn :</u> ✓ This course is a comprehensive look at the ISO/IEC 17025 requirements, as well as the process of accreditation and the assessment of a laboratory's competence. Previously taught in separate courses, the merged subject matter enables the instructors to present an understandable explanation of the standard and how it should be applied. In this course, you will gain critical insight into the interpretation of the requirements of this laboratory standard and you will also receive a detailed review of the accreditation process. ✓ You will learn how to evaluate laboratory documents and quality manuals. You will have an opportunity to review sample quality system documents from other laboratories. A quality manual will be examined as to its impact on laboratory operations and the purpose it serves. You will learn what information it should contain, what writing style is most effective and the requirements needed to keep a quality manual and system documents up to date. ✓ This course also gives attendees the knowledge needed to evaluate a laboratory's internal quality audit program as required by ISO/IEC 17025, and to initiate the sequence of activities involved in scheduling, planning, conducting and reporting on assessments. Participants will learn to employ effective techniques for obtaining objective evidence and information. Key critical assessment issues, including the evaluation of analyst/technician competency, method validation, measurement traceability and measurement uncertainty, will also be presented.	
Year (participants)	✓ 2004 (50-75 in three US cities) ✓ 2005 (50-75 in three US cities) ✓ 2007 (50-75 in three US cities)	
Operation Summary	✓ The course materials will be presented in an "interactive" lecture style (50%), as well using application exercises and role playing (50%). ✓ 2.7 Continuing Education Units Earned ✓ Final course examination given/Certificate of completion and/or attendance Awarded ✓ 4 and ½ day Course	
Curriculum Summary	Title	*(language : English)*
	Authors, Publisher, Year	N/A
	Syllabus)	• Course Introduction • Pre-Course Quiz

		• Overview of Conformity Assessment concepts • Accreditation of accreditation bodies • Accreditation benefits and process • ISO/IEC 17025 • Background of ISO/IEC 17025 • Critical terminology • Requirements examined and explained • Critical quality system elements emphasized • Quality system documentation • Benefits of quality manual and related documents • Document control, maintenance, storage and disposal • Quality system structures • Evaluating the compliance of documents and the control system • Assessments of laboratory competence • Review of requirements • Human relation aspects of assessment • Planning assessments • Developing checklists • Effective questioning and assessment techniques • Final course material review and examination
	Weblink	Not Available
Title 2 (weblink)	A2LA (American Association for Laboratory Accreditation) Training Program 'ISO/IEC 17025 and Accreditation' (weblink: http://www.a2la.org/training/course_schedule.cfm)	
Operator (website)	A2LA (American Association for Laboratory Accreditation) (website: www.a2la.org)	
Type (Target Groups)	P6. Various Target Groups (please use 'Type' in question used in 2.1)	
Learning Objectives	In this program, the audience (students) learn : ✓ This course is a comprehensive look at ISO 17025 and its documentation and internal auditing requirements. Previously taught in three separate one-day courses, the merged subject matter enables the instructor to present an understandable explanation of the standard and how it should be applied. In this course, you will gain critical insight on the interpretation of the requirements of this new laboratory standard and you will also receive a detailed review of the accreditation process. ✓ You will learn how to design and develop laboratory documents and quality manuals. The quality manual will be examined as to its impact on laboratory operations and what purpose it serves. You will learn what information it should contain, what writing style is most effective and how to keep your documents and quality manual up to date. ✓ This course also gives attendees the knowledge needed to establish an internal quality audit program as required by ISO 17025, and to initiate the sequence of activities involved in scheduling, planning, conducting,	

<table>
<tr><td></td><td colspan="2">reporting on and closing out internal quality audits. Participants will be able to employ effective techniques of auditing and the ability to develop the auditing procedures, scheduling and recording systems needed to sustain the program.
✓ Attendees will receive practical instructions on the development, implementation and long-term maintenance of an effective laboratory quality system.</td></tr>
<tr><td>Year
(participants)</td><td colspan="2">✓ 2004 (150 in four U.S. Cities)
✓ 2005 (150 in four U.S. Cities)
✓ 2006 (150 in four U.S. Cities)</td></tr>
<tr><td>Operation
Summary</td><td colspan="2">✓ The course materials will be presented in an “interactive” lecture style (50%), as well using application exercises and role playing (50%)
✓ 1.5 Continuing Education Units Earned/Certificate of attendance Awarded
✓ 2 and ½ Day Course</td></tr>
<tr><td rowspan="3">Curriculum Summary</td><td>Title</td><td>(language : English)</td></tr>
<tr><td>Authors,
Publisher, Year</td><td>N/A</td></tr>
<tr><td>Syllabus</td><td>National and International Perspective: Mutual recognition of accrediting bodies
ISO/IEC 17025:2005 What the Standard Requires
• Quality system
• Subcontractor quality
• Equipment control
• Maintenance
• Training
• Calibration
• Traceability
• Test procedures
• Sample preparation
• Nonstandard samples
• Environmental conditions
• Reports
• Document control, maintenance, storage and disposal
• The auditing and accrediting process
Preparation of Documentation:
• Documentation Requirements
• How to design a quality manual
• Effective documentation control
• Auditing a sample quality manual
Internal audits of the lab:
• What is an internal audit; why it's important
• What should it accomplish
• How should the program be organized; steps
• How should effort be coordinated</td></tr>
</table>

		• Establishing/managing audit program • Planning/conducting the audit • Effective questioning techniques A2LA accreditation process and benefits
	Weblink	Not Available
Title 3 (weblink)	A2LA (American Association for Laboratory Accreditation) Training Program 'Introduction to Measurement Uncertainty' (weblink: http://www.a2la.org/training/course_schedule.cfm)	
Operator (website)	A2LA (American Association for Laboratory Accreditation) (website: www.a2la.org)	
Type (Target Groups)	P7. The course is suitable for all personnel of both Calibration and Testing laboratories	
Learning Objectives	In this program, the audience (students) learn : ✓ Every effort is made to eliminate unnecessary complications, to apply the GUM at its simplest level and to take away apparent mystery. Participants who have never drawn up uncertainty budgets before usually develop the required skill well before the end of the class. Others who seek explanations of GUM complexities obtain clarifications expressed in simple terms. Measurement uncertainty problems are solved by brainstorming methods so as to generate interaction by all participants. ✓ At the end of the course, participants will be able to produce conservative uncertainty estimates.	
Year (participants)	✓ 2004 (80-100 in four U.S. Cities) ✓ 2005 (80-100 in four U.S. Cities) ✓ 2006 (80-100 in four U.S. Cities)	
Operation Summary	✓ Exercises and examples are worked out in all the above areas by the instructors, by the participants alone and by the participants in groups. Some exercises are provided as opportunities for private study. ✓ 1.2 Continuing Education Units Earned/Certificate of Attendance Awarded ✓ 2 Day Course	
Curriculum Summary	Title	*(language : English)*
	Authors, Publisher, Year	N/A
	Syllabus	**Introduction** The need for uncertainty estimates **References** The GUM Other more user-friendly material **Definitions** Understandable and concise **Estimating uncertainties** general statistics , distributions , confidence levels , standard deviation random , systematic sources

		Type A , Type B methods Applying corrections Outside limit estimates How many measurements? Combination of uncertainties Correlated Uncorrelated Expanded uncertainty Reduced confidence **Drawing up an uncertainty budget Compliance, test/calibration to specification, decision rules** **Contracts** **Traceability of accuracy**
	Weblink	Not Available
Title 4 (weblink)	A2LA (American Association for Laboratory Accreditation) Training Program 'Quality Assurance and Analysis Tools for Calibration and Testing Labs' (weblink: http://www.a2la.org/training/course_schedule.cfm)	
Operator (website)	A2LA (American Association for Laboratory Accreditation) (website: www.a2la.org)	
Type (Target Groups)	P6. Various Target Groups (please use 'Type' in question used in 2.1)	
Learning Objectives	In this program, the audience (students) learn : Quality Assurance analysis tools are normally thought of as manufacturing and process oriented statistical analysis tools. So, why utilize them in metrology and testing applications? They are used in many indirect ways in metrology even when laboratory personnel do not think they are using them. When one checks their standards at a regular interval, performs intermediate checks and record the data, they are informally performing the first half function of control charts. Comparing results of one calibrator versus another is another informal approach of analyzing data. This seminar formalizes different techniques used in calibration and testing laboratories, so more information is derived from the data gathering exercise. As a result there is more confidence in the analysis of data and results reported. Typical applications of Quality Assurance Analysis Tools extend to: • Check Standards • Stability Studies • Characterize Drift • Long Term Reproducibility • Predicting Out of Tolerance (OOT) conditions • Determine Realistic tolerances • Determine Uncertainties • Proposed changes to the ISO 17025	
Year (participants)	✓ 2006 (30-40 in two U.S. Cities)	
Operation Summary	✓ Applicable techniques for both testing and calibration laboratories are taught using a hand-on approach. A computer spreadsheet is used to demonstrate the calculation techniques. Participants are provided the spreadsheet at the end of seminar for future reference.	

Curriculum Summary	Title	*(language : English)*
	Authors, Publisher, Year	N /A
	Syllabus	**Basic Statistics Introduction** • Mean, Mode, Median, Range • Population and Sample Standard Deviation • Standard Deviation of the Mean • Histogram, Bell Curve, Central Limit Theorem • z, t and F distributions **Control Chart Methods** • Types of Control Charts • Decision rules for interpreting Control Chart data • Control Chart Applications in Metrology • Process Capability **Measurement Systems Analysis** • Measurement Related Definitions and Concepts • Bias, Linearity and Stability • Regression Analysis • Gage R & R • Analysis of Variance (ANOVA) **Prevention Techniques** • Predicting Out Of Tolerance (OOT) conditions • Applying basic guard banding techniques • Calibration Interval Analysis Overview
	Weblink	Not Available

**** Submitted by (please contact following person for further information):***

Economy	United States of America
Org/Ministry	American Association for Laboratory Accreditation
Position	Training Coordinator
Name	Julie Stevens
Phone, Email	(301)644-3235, jstevens@a2la.org

D62. USA – ANSI – Course 205 - ISO Secretariat Operations (Annex.B #82)

Title (weblink)	**Course No. 205** ISO Secretariat Operations: Taking the Secret out of the Secretariat (www.ansi.org/education_trainings/course_descriptions/descriptions/course205.aspx?menuid=9)	
Operator (website)	ANSI (website: www.ansi.org)	
Type (Target Groups)	Those holding, or anticipating holding, ISO committee secretariats on ANSI's behalf and anyone requiring an in-depth knowledge of ISO and IEC procedures for technical work.	
Learning Objectives	In this program, the audience (students) learn : ✓ Obtain insight and advice on every aspect of successful International Organization for Standardization (ISO) committee management. ✓ Increase your understanding of the international standards development process and alternative deliverables, and learn effective management techniques. ✓ Acquire knowledge of the roles and responsibilities of all committee officers. Understand ANSI's relationship to ISO and the International Electrotechnical Commission (IEC). ✓ Learn about requirements for ISO committee meetings, and helpful hints on preparation for and conduct at meetings. ✓ Also covered are special issues for Secretariats, including a review of new ISO electronic management tools.	
Year (participants)		
Operation Summary	One day seminar	
Textbook(Syllabus) or Curriculum Summary	Title	**Course No. 205** ISO Secretariat Operations: Taking the Secret out of the Secretariat
	Table of contents (curriculum or Syllabus)	**What You Will Learn:** • The mission and organizational structure of ANSI, ISO and IEC • How a national body participates in the technical work of ISO and IEC • The concept of global work teams • ANSI-accredited U.S. Technical Advisory Groups (TAGs) and Technical Advisors (TAs) • The formation of and responsibilities of technical committees, sub-committees, working groups, and ad hoc groups • The qualifications, appointment and responsibilities of the secretary, chairman, convener, rapporteur, project leader and liaison officer • The secretary's responsibilities at each stage of the technical work. • The principles of consensus, project management, cost effectiveness and discipline • How to use the new ISO/IEC Directives and Supplements • IEC/ISO deliverables development process

		• Alternate procedures • New alternate deliverables • How to prepare, number and issue committee documents • Project and document tracking systems • Management of key elements of data regarding people and projects • Meeting schedules, preparation, how to call a meeting, prepare a draft agenda and issue documents • The secretary's role at a meeting and interaction with the host • Recording decisions made by the committee **Special issues of Secretariat are reviewed including:** • ISO, IEC and European Strategy o European Committee for Standardization (CEN) o Helpful hints for the ISO/CEN Vienna Agreement o European Committee for Electrotechnical Standardization (CENELEC) o IEC/CENELEC Dresden Agreement • ISO/Technical Committee (TC) Business Plans • ISO/TC Server website • Electronic Balloting • ISO Electronic Templates • Electronic File Issues • ISO Electronic Management Tools **After attending this program participants will understand:** • The purpose and value of international standardization and the key voluntary consensus standards organizations • The ISO and IEC organizational structure and the corresponding U.S. national structure • The six-stage project development cycle and related international procedures • The requirements related to the conduct of international committee meetings • How to effectively manage the international standards development process and secretariat committee activities
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course205.aspx?menuid=

**** Prepared by the Project Editor***

****Based on ANSI website***

D63. USA – ANSI – Course 208 - US TAG (Annex.B #83)

Title **(weblink)**	**Course No. 208** The Operating Procedures of U.S. TAGs to ISO: Strengthening the U.S. Voice in International Standardization (http://www.ansi.org/education_trainings/course_descriptions/descriptions/course208.aspx?menuid=9)	
Operator **(website)**	ANSI (website: http://www.ansi.org)	
Type **(Target Groups)**	Corporate standards personnel and subject matter/technical experts interested in participating in ISO technical activities; current or prospective ANSI-accredited U.S. TAG members, officers and administrators; accredited delegates to international standards meetings	
Learning **Objectives**	In this program, the audience (students) learn : ✓ Explore the processes and operating procedures of ANSI-accredited U.S. technical advisory groups (TAGs) to the International Organization for Standardization (ISO). ✓ Learn about accreditation, membership, voting requirements and rules for developing positions. ✓ Find out how to be an effective international delegate at ISO committee meetings.	
Year **(participants)**		
Operation **Summary**	One day seminar	
Textbook(Syllabus) **or Curriculum** **Summary**	Title	**Course No. 208** The Operating Procedures of U.S. TAGs to ISO: Strengthening the U.S. Voice in International Standardization
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What You Will Learn** • Why standards and the international standards development process are important • How ANSI provides leadership and support for effective U.S. participation in international standardization • The formation, function and role of U.S. TAGs • The roles and responsibilities of TAG administrators, officers and project leaders • The process for accreditation of a TAG • The key ANSI principles of due

		process, consensus, openness and balance • Appropriate TAG communications • How to use the IEC/ ISO International Electrotechnical Commission Directives and Supplements • IEC/ISO deliverables development process • Alternate procedures and new deliverables • Who the "players" are in the international standards arena • How to develop strong U.S. technical contributions • How to map U.S. actions to corresponding international actions and vice versa After attending this program, participants will understand: • The rules and procedures governing the activities of ANSI-accredited U.S. TAGs • The ISO standards development process • How to more effectively facilitate the work of U.S. TAGs and delegates to promote the acceptance of U.S. positions in an international standards committee • How to enhance U.S. involvement in the international arena
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course208.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D64. USA – ANSI – Course 209 – Effective Business (Annex.B #84)

Title **(weblink)**	**Course No. 209** Effective Business/Industry Participation in Standards Development: Strategies for Success (www.ansi.org/education_trainings/course_descriptions/descriptions/course209.aspx?menuid=9)	
Operator (website)	ANSI (website: www.ansi.org)	
Type **(Target Groups)**	Corporate standards personnel; members, officers and administrators of national and international standards committees, including subject matter/technical experts and accredited delegates to international meetings; ANSI-accredited U.S. TAG members, officers and administrators.	
Learning **Objectives**	In this program, the audience (students) learn : ✓ Learn why effective management of the standardization process is important, and how to promote and protect your organization through effective participation in standards activities. ✓ Find out how to prepare for - and excel at - standards meetings so you can influence the development of national, regional and international standards. ✓ Understand how Strategic Standardization Management can enhance your organization's competitive position in the global marketplace, and assist core business units to ensure interoperability, improve efficiency, reduce cost, and avoid costly omissions and violations.	
Year		
Operation	One Day and a Half	
Textbook(Syllabus) or Curriculum Summary	Title	**Course No. 209** Effective Business/Industry Participation in Standards Development: Strategies for Success
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	You will learn: • About standards and why the marketplace demands them • Questions to ask prior to initiating standards development activity • How to initiate the standards development process in your organization • How to use the strategic management process as a business development tool • The interface between standards developing organizations and industry associations • The key standards organizations and the major National, Regional and

		International Standards Bodies • The standards development process (domestic and international) from the initiation of a new work items proposal to final approval and publication **Learn tips and techniques for effective meeting preparation and participation including:** • An introduction to Parliamentary Procedure - "Robert's Rules of Order" • Responsibilities of subject matter experts (SME) and committee participants • Meeting guidelines and requirements: protecting yourself, your company and your committee • Committee rules regarding leadership positions, hosting meetings, submitting reports, handling ballots • business practices, antitrust laws and patent policies and issues. **Workshop:** The hands-on workshop included in this program will help participants develop individual strategies and an action plan to help get the process started. Participants will review and discuss relevant standards development case studies, compile industry research and information, identify standard opportunities and potential partnerships, and develop work plans and strategic initiatives. **After attending this program participants will understand:** • How corporate, national and international standards, when applied strategically, can assist an organization's new product development teams. • How to develop a proactive strategy for dealing with the possible negative ramifications of not participating • How to promote and protect their organization's interests through effective participation in standards development work; • How to get the most out of participation in standards meetings.
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course209.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D65. USA – ANSI – Course 210 – Working Together (Annex.B #85)

Title **(weblink)**	**Course No. 210** Development of ISO and IEC Standards: Working Together (www.ansi.org/education_trainings/course_descriptions/descriptions/course210.aspx?menuid=9)	
Operator **(website)**	ANSI (website: http://www.ansi.org)	
Type **(Target Groups)**	Corporate standards personnel, members, officers and administrators of international standards committees, subject matter expert/technical experts and accredited delegates to international meetings; ANSI-accredited U.S. TAG members, officers and administrators	
Learning **Objectives**	In this program, the audience (students) learn : ✓ This course provides a general overview of international standardization and contains elements from ANSI courses on the international standards development process, committee management and U.S. delegate representation. Explore the processes and stages of development of ISO, IEC, and JTC1 international standards. ✓ Get an understanding of the "project approach" in international standards development, and identify the roles and responsibilities of the various standards organizations and committee personnel. ✓ Understand the general rules and procedures governing the conduct of U.S. delegates to international meetings. ✓ Learn how to prepare an International Standard in accordance with the ISO/IEC Directives, and understand the alternative standards development programs, new deliverables and adoption of existing standards.	
Year **(participants)**		
Operation **Summary**	One Day	
Textbook(Syllabus) **or Curriculum** **Summary**	Title	**Course No. 210** Development of ISO and IEC Standards: Working Together
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What You Will Learn** **An Overview of International Standardization** • What are international standards • What are the organizations involved in "global" standardization (ISO/IEC JTC1, ANSI, U.S. TAGs, and the European Standards Organizations **Stages of Technical Work**

		• What is consensus and how does it apply to the "project approach"
		• What is the role and function of an Working Group
		• How does a U.S. TAG influence an WG
		• What are the roles and responsibilities of a project leader
		• How is technical work initiated
		• What are six stages of project development and related international procedures
		  o Overview of ISO/IEC deliverables development process
		Global Relevance of ISO/IEC Standards
		• What are the principles and implementation guidance
		Review of New Procedures
		• What are the alternate standards development procedures and new deliverables
		• What are the options for the adoption of existing standards
		• What are the new timeline options for development of ISO/IEC standards
		• What are the new requirements for submission of electonic ballots.
		How to Write a "Standard" Standard
		• Tracking and "Ownership" issues of an editor and a working group
		• Compliance with the ISO/IEC Directives
		• General principles: Structure and layout of an International Standard
		• Basic Elements of a Standard
		  o "Mandatory" versus "Optional" text
		  o "Normative" versus "Informative" text
		  o "Substantive" modifications
		Tools to Simplify the Task–Using the ISO Electronic Template and Model Document
		Similar yet Different
		• Understanding the European Regional Standards Development Process
		• Comparing and Contrasting the European Process with that of ISO and IEC
		• Rules for Working Together
		  o The role of the Vienna Agreement and the European Union

		At the Meeting: Things That Might Come Up • What to do when U.S. position is unclear • How to win acceptance of your point of view • Discussion of the means and mechanisms available for U.S. influence in the regional standards bodies .
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course210.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D66. USA – ANSI – Course 211 – Leadership Traning (Annex.B #86)

Title **(weblink)**	**Course No. 211** Leadership Training: Managing Standards Activities Effectively (www.ansi.org/education_trainings/course_descriptions/descriptions/course211.aspx?menuid=9)	
Operator (website)	ANSI (website: http://www.ansi.org)	
Type **(Target Groups)**	Leaders of national and international standards committees, working groups, task forces, project teams and delegations who want to increase the proficiency and productivity of their committee.	
Learning **Objectives**	In this program, the audience (students) learn : ✓ Get the skills that are vital to the standardization leadership team – the committee chairperson and secretary/administrator. ✓ Understand the responsibilities of the members of the standards development team, and learn how to manage the consensus-building process. ✓ Learn how to prepare for and conduct efficient and productive meetings. Examine leadership opportunities for other participants in the standards development process including subgroup leaders, heads of delegation, project leaders, and technical experts. ✓ Learn how to get buy-in for your project at all stages of development, influence the procedural and policy decision making processes, and reduce conflict	
Operation	Full or Half day seminar	
Textbook(Syllabus) or Curriculum Summary	Title	**Course No. 211** Leadership Training: Managing Standards Activities Effectively
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	Learn effective techniques for: • facilitating the group decision making process to produce timely standards that are widely implemented • developing consensus in an environment where participants' motivations different • planning and conducting efficient and productive meetings • maintaining progress by understanding procedural options, including effective delegation of responsibilities. After attending this program participants will understand: • Roles, responsibilities and

		qualifications of the chairperson/convener, secretary/administrator, project leader/project editor and member/participant • Standards development as a group activity • "Dos and Don'ts" of effective leadership • How to obtain unified solution from multiple opinions • How to develop consensus in a committee environment • The power of strategic planning and the importance of market relevance Learn how to plan, prepare and conduct efficient and productive meetings by: • Scheduling meetings and developing draft agendas that help to prepare committee members and maximize participation • Using information technology tools as an alternative to face-to-face meetings • Exploring ways to effectively record and act upon committee decisions • Leading discussions to maximize potential of the group dynamic • Understanding problem definition, information gathering and evaluation, and solution development • Learning the fine art of listening, asking questions and summarizing • Managing conflict and controlling problem participants • Avoiding surprises by drawing out non-participants • Making effective use of breaks • Understanding and implementing alternative procedures and deliverables • Delegating effectively by increasing commitment and accountability
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course211.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D67. USA – ANSI – Course 284 – Delegate to Diplomat (Annex.B #87)

Title **(weblink)**	**Course No. 284** From Delegate to Diplomat: Representing the United States in International Standards Activities (www.ansi.org/education_trainings/course_descriptions/descriptions/course284.aspx?menuid=9)	
Operator (website)	ANSI (website: www.ansi.org)	
Type **(Target Groups)**	ANSI-accredited U.S. TAG members, officers and administrators; subject matter/technical experts and project editors/leaders; and especially accredited delegates to international standards meetings.	
Learning **Objectives**	✓ Effective representation in the international standards arena is critical to ensuring that the U.S. competes on a level playing field. ✓ As a U.S. delegate you are a key player in representing and advocating national positions and policies at the international level. ✓ Your effectiveness may well determine the success of U.S. standards developers and the industry sectors they serve in competing with other nations in the global marketplace. ✓ Ineffective representation in international standardization activities may result in standards that run counter to the best interests of U.S. industry, and that could have a serious impact on U.S. trade and economic growth. ✓ This course will teach specific tactics to help U.S. delegates present positions more effectively and provide a better understanding of international politics	
Operation	One day seminar	
Textbook(Syllabus) or Curriculum Summary	Title	**Course No. 284** From Delegate to Diplomat: Representing the United States in International Standards Activities
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What you will learn:** • The strategic importance of having a seat at the international table. • The importance of adopting International Organization for Standardization (ISO) standards. • A solid knowledge of the rules and procedures governing the conduct of U.S. delegates to international meetings. • ANSI's relationships to ISO, the International Electrotechnical Commission (IEC), regional standards bodies and consortia • Developing successful strategies and

		tactics for negotiating U.S. positions in international standards activities, including the development process and procedures. **What every delegate should know:** • What it means to be part of a delegation, how you are expected to behave and what your goals are • Why you have been appointed and the necessary conditions of your appointment • An in-depth knowledge of the stages of technical work, including how it is initiated, assigned and developed • The Working Group's role, function and coordination with a U.S. Technical Advisory Group (TAG) as well as the definition of consensus • What to do when U.S. positions are unclear • How to win acceptance of your point of view • Official languages • Extending invitations for meetings in U.S. • Reporting requirements including press reports, head of delegation meeting reports, and communications to your TAG Administrator and ANSI Key players on the international scene: • The role of committee personnel, including the Committee Chair, Working Group Convener, Project Leader, U.S. Head of Delegation and U.S. Expert • Delegate acceptance of secretariats • The role of the Vienna Agreement and the European Union Each participant will receive a copy of the updated ANSI Guide to Delegates to IEC and ISO Meetings.
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course284.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D68. USA – ANSI – Course 287 – The American Way (Annex.B #88)

Title **(weblink)**	**Course No. 287** The American Way: The American National Standard(ANS) Development Process (www.ansi.org/education_trainings/course_descriptions/descriptions/course287.aspx?menuid=9)	
Operator **(website)**	ANSI (website: http://www.ansi.org)	
Type **(Target Groups)**	Staff from standards developing organizations; standards committee members, officers and administrators; corporate standards personnel; subject matter/technical experts; and those who want to learn more about how to develop American National Standards.	
Learning **Objectives**	✓ Gain greater understanding and guidance on the practical application of the American National Standard (ANS) development process and procedures, and the value of ANSI accreditation. ✓ Learn why U.S. voluntary consensus standards are important, the types of accreditation, all the stages in the standards development process, and how to make the most of participation in standards development. ✓ This course is an excellent "nuts and bolts" preparation for those who are considering becoming an ANSI-accredited standards developer.	
Year **(participants)**		
Operation **Summary**	One day seminar	
Textbook(Syllabus) **or Curriculum** **Summary**	Title	**Course No. 287** The American Way: The American National Standard(ANS) Development Process
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What You Will Learn** The following are topics covered in detail in this comprehensive course on U.S. voluntary consensus standardization and American National Standards (ANS) development process: **Benefits of standardization** **ANSI's role in the U.S. standardization system** **Accreditation** • What is accreditation? • Why ANSI accredits standards developers • Benefits and value of the

		accreditation process • Methods of accreditation • Steps in the accreditation process • Key ANSI committees and procedural documents **American National Standards (ANS) Development Process** • Procedures that govern the ANSI process • Development stages • Demonstrating and determining consensus • Public review • Maintenance of standards and accreditation • Supplements • Interpretations • Harmonization • Adoption of international standards • Required policies: appeals, patent, record retention, and metric **Appeals** • Understanding the appeals process • Types of appeals - to a Standards Developer - to the Board of Standards Review - to the Executive Standards Council - to the Appeals Board **Audit Program** • Purpose and scope • How audits can benefit standard developers • How the audit is conducted • Contents of the audit report **Tips and Techniques for Effective Participation** • How to integrate the standard development process within your organization • How to prepare for participation • Meeting preparation and conduct • How to handle objections and build consensus • Evidence of consensus • Identifying and involving participants
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course287.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D69. USA – ANSI – Course 301 – Public-Private Partnership (Annex.B #89)

Title **(weblink)**	**Course No. 301** Making the Most of the Public-Private Partnership in Standards (:www.ansi.org/education_trainings/course_descriptions/descriptions/course301.aspx?menuid=9)	
Operator **(website)**	ANSI (website: http://www.ansi.org)	
Type **(Target Groups)**	Anyone from either the public- or private-sector who wants to understand how to use the public/private partnership in standards development to advance his or her organization's interest; federal, state and local government personnel; members, officers and administrators of ANSI-accredited U.S. TAGs and standards committees; subject matter/technical experts.	
Learning **Objectives**	✓ Get an introduction to the importance of the public-private partnership in standards to both the private sector and the federal government. ✓ Learn how this partnership affects U.S. competitiveness, health, safety, and the environment. ✓ Learn why this partnership is important to your organization's mission, whether you are in government or the private sector, and how you can use it to advance your organization's interests. ✓ Understand how the private sector can take advantage of requirements for public-private harmonization and cooperation in standardization. ✓ Learn about internationally accepted standards, and the roles of regional and international standardization and conformity assessment organizations.	
Year **(participants)**		
Operation **Summary**	Half day	
Textbook(Syllabus) **or Curriculum** **Summary**	Title	**Course No. 301** Making the Most of the Public-Private Partnership in Standards
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	**What You Will Learn** • The basic structure of the standards community, both within the U.S. and internationally • The roles of ANSI and the National Institute of Standards and Technology (NIST) • How to identify different methods of

		standards development, and understand how the government uses each of them • How the National Technology Transfer and Advancement Act (NTTAA), and other federal laws and policies affect the government's use of standards • How voluntary consensus standards become part of federal regulations • How private sector standards become part of federal regulations • Strategies for more effective government participation in standards development • Tips and tools to help government agencies and the private sector work together more effectively • Strategies for getting management support for participation in standards and conformity assessment activities
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course301.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D70. USA – ANSI – Course 306 – Strategic Standardization (Annex.B #90)

Title **(weblink)**	**Course No. 306** Strategic Standardization Management Briefing (www.ansi.org/education_trainings/course_descriptions/descriptions/course306.aspx?menuid=9)	
Operator **(website)**	ANSI (website: http://www.ansi.org)	
Type **(Target Groups)**	CEOs; senior managers; standards, business, manufacturing and engineering managers; and other company, organization or agency personnel responsible for increasing profits; lowering costs of procurement, proficiency and production in the standards arena, have gained valuable tools and knowledge during this half-day course on strategic standardization management.	
Learning **Objectives**	✓ Learn why strategic standardization management is important to your business, industry, organization, or agency. ✓ Understand why attention to standardization is more of a business or policy issue than a technical one	
Operation Summary	Half day	
Textbook(Syllabus) **or Curriculum** **Summary**	Title	**Course No. 306** Strategic Standardization Management Briefing
	Table of contents (curriculum or Syllabus)	**Learn about the advantages of implementing a standards policy** Strategic standardization management is a management discipline that investigates all aspects of standardization across a business, organization, industry, or agency. It then defines, recommends, and implements appropriate strategies and policies that can give a company or organization the competitive advantage, or avoid competitive disadvantage including in the area of procurements by government agencies and educational institutions. • Reduce costs internally as well as in procuring equipment and services • Reduce time to market or upgrade of agency infrastructures • Open new markets and encourage innovation • Increase sales and create new jobs • Reduce trade barriers • Enhance competitiveness **Learn about the benefits of participating in standards development** As a corporate executive, agency standards

		official, or standards developer or user, you may think that funding standards development is a non-value-added activity. This course will examine why it pays to focus attention on standards and conformity assessment, ensuring that your business or organization can compete on a level playing field, and, as a government official, how this encourages competitiveness and ensures economic security. • Make the standards instead of playing by your competitor's or other's rules • Participate in developing new markets and strengthen existing ones • Ensure foreign market access for US goods and services • Satisfy agency missions by relying on voluntary consensus standards instead of creating new regulations • Gain competitive or procurement advantage and satisfying agency mission by influencing the content of standards • Minimize time to market and upgrade to new systems for e-government • Avoid standards that add cost but no value, and standards that restrict trade. Examine industry and agency case studies of organizations (private and public) opting into strategic standardization management. You will learn how these companies, agencies and organizations have: • Focused the corporate or agency perspective on the strategic use of standards • Made strategic standardization management an integrated tool in the planning process • Made product and service development more effective, and procurements more cost-effective and allowed for interoperability • Identified standardization opportunities for joint development of parts, components, and engineering processes across the entity • Reduced parts, assemblies and costs • Strengthened global market positions and improved defense readiness • Increased the understanding at all management levels of the global impact of strategic standardization management
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course306.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D71. USA – ANSI – Course 627 – Strategic Standardization (Annex.B #91)

Title (weblink)	**Course No. 627** Personnel Certification Accreditation Workshop: (www.ansi.org/education_trainings/course_descriptions/descriptions/course627.aspx?menuid=9)	
Operator (website)	ANSI (website: www.ansi.org)	
Type (Target Groups)	presentatives of corporations, organizations, government agencies and others who either operate personnel certification programs or who wish to learn more about the ANSI accreditation process.	
Learning Objectives	✓ This two-day workshop is designed to introduce interested stakeholders to the international standard ANSI/ISO/IEC 17024 — *General requirements for bodies operating certification schemes for persons*. ✓ Discussions focus on building an understanding of the standard's requirements, its benefits, and why it has become the benchmark for personnel certification	
Operation Summary	Two Days	
Textbook(Syllabus) or Curriculum Summary	Title	**Course No. 627** Personnel Certification Accreditation Workshop: Understanding the Requirements of ANSI/ISO/IEC 17024 - General requirements for bodies operating certification schemes for persons
	Table of contents (curriculum or Syllabus)	**What You Will Learn** Through presentations, small group discussions and exercises, you will: • review the requirements of ANSI/ISO/IEC 17024 • identify what content (including types of documents and data) may be helpful in demonstrating compliance with each requirement and how this content will be reviewed during an audit • define terminology and identify documents, best practices and other resources that can be helpful in building an understanding of the standard • become familiar with the ANSI accreditation process and its reliance on not only ANSI/ISO/IEC 17024, but also the International Standard ISO/IEC 17011, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies* This workshop is designed to provide participants with the assistance they need to initiate a self-assessment process that will identify strengths, as well as possible gaps, in policies and procedures
	Weblink	http://www.ansi.org/education_trainings/course_descriptions/descriptions/course627.aspx?menuid=9

**** Prepared by the Project Editor***

****Based on ANSI website***

D72. USA – ANSI – eLearning – Why Standards Matter (Annex.B #92)

Title	eLearning - Why Standards Matter	
Operator	ANSI (www.standardlearn.org)	
Type	All	
Learning Objectives	✓ Build your vocabulary of standards-related terminology ✓ Identify the difference between voluntary standards and mandatory regulations ✓ Understand the basics of conformity assessment (i.e., how compliance with a standard is determined) ✓ Recognize the importance of standards in everyday life by reviewing examples of how standards help to facilitate commerce, improve quality, and protect your health, safety and the environment ✓ Understand how different stakeholders (individuals and consumer representatives, organizations and companies, government agencies, etc.) are involved in standardization activities	
Operation Summary	Online education contents, open for anyone for free Disclaimer: This course highlights a variety of standards and references a sampling of organizations involved in standards development. These may not be the only organizations involved in standards development in the specific industry sector highlighted. The purpose of this course is to make a connection between the standard and an organization and industry, as example, and not to preclude or include all relevant organizations. When you complete this section, you will be able to: Recognize how standards are an integral part of every business; Recognize the role of standards in U.S. business and the global marketplace; Understand how standards improve efficiency and economy; Recognize how standards provide access to global markets for U.S. industry.	
Textbook(Syllabus) or Curriculum Summary	Title:	Online text
	Authors, Publisher, Year	ANSI
	Table of contents (curriculum or Syllabus)	➢ Standards in the World Around You ➢ Standards Are Important ➢ Standards Protect our Health, Safety, and the Environment ➢ The Business of Standards ➢ Exam
	Weblink	http://www.standardslearn.org/coursedetails.aspx?key=44

**** Prepared by the Project Editor***

****Based on ANSI website***

D73. USA – ANSI – eLearning – Legal Issues (Annex.B #93)

Title	eLearning - Short Course: Legal Issues in Standard-Setting	
Operator	ANSI (www.standardlearn.org)	
Type	All	
Learning Objectives	✓ Carefully review responsibilities and techniques for effective participation in standards development activities. ✓ Learn how to promote and protect your organization's interests through effective participation in standards development work.	
Operation Summary	Online education contents, open for anyone for free This course shall not be considered legal advice, but rather a quick overview of things that you might wish to discuss further with your own organization's legal counsel. This course will outline how U.S. antitrust laws may apply to the standards development process. You will be provided with a brief background on the laws and some basic guidelines on what can be done, and what should be avoided, at standards meetings. You will also receive information regarding the policies that guide a standard-setting committee when it wants to include patented technology or material as part of the standard. The ANSI Essential Requirements are based on practices and court rulings that have affected standards development activities.	
Textbook(Syllabus) or Curriculum Summary	Title:	Online text
	Authors, Publisher, Year	ANSI
	Table of contents (curriculum or Syllabus)	➢ Applicable Antitrust Laws ➢ Applicable Patent Policies ■ American National Standards Institute ■ International Organization for Standardization (ISO), ■ International Electrotechnical Commission (IEC) and the ■ International Telecommunications Union (Radiocommunications and Telecommunications Sectors)
	Weblink	http://www.standardslearn.org/coursedetails.aspx?key=59

**** Prepared by the Project Editor***

****Based on ANSI website***

D74. USA – ANSI – eLearning – History (Annex.B #94)

Title	eLearning - Short Course: Through History with Standards	
Operator	ANSI (www.standardlearn.org)	
Type (Target Groups)	All	
Learning Objectives	✓ To provide an entertaining and informative introduction to standardization over a span of several centuries.	
Operation Summary	Online education contents, open for anyone for free	
Textbook(Syllabus) or Curriculum Summary	Title:	Online text
	Authors, Publisher, Year	ANSI
	Table of contents (curriculum or Syllabus)	This quick overview will demonstrate how standards have evolved over time. Examples include: ➢ Measurement (the Ell) ➢ Railroad Tracks ➢ Standard Parts ➢ Interchangability ➢ Electric Lamps ➢ Safety
	Weblink	http://www.standardslearn.org/coursedetails.aspx?key=60

**** Prepared by the Project Editor***

****Based on ANSI website***

D75. USA – ANSI – eLearning – Today and Tomorrow (Annex.B #95)

Title	eLearning - U.S. Standards System – Today and Tomorrow	
Operator	ANSI (www.standardlearn.org)	
Type	All	
Learning Objectives	✓ Identify the different types of standards ✓ Understand how standards are developed ✓ Distinguish between a voluntary consensus standard and a technical regulation ✓ Describe the impact of standards on business, government and professional and trade organizations ✓ Understand the roles of the principal national and international standards organizations ✓ Describe the national standards development process ✓ Explain the ANSI accreditation process ✓ Explain the value of participation in standards development ✓ Understand how to participate in standards development	
Operation Summary	Online education contents, open for anyone for free This course is the next step in learning about standards and standards development; it builds on the introductory course, Why Standards Matter. You will receive an overview of the U.S. standards development environment, including the American National Standards (ANS) process. The course will inform you about the value of participating in standards development and reviews the key questions to ask before development is initiated. It also offers examples of the various types of standards and explains how standards development relates to national and international business. Each lesson includes a set of self-assessment questions leading up to a final exam at the end of the course. The entire program should take approximately one and one half hours to complete.	
Textbook(Syllabus) or Curriculum Summary	Title:	Online text
	Authors	ANSI
	Table of contents (curriculum or Syllabus)	➢ The Big Picture ➢ Standards Today – The World Has Changed ➢ Types of Standards ➢ U.S. National Standards Development – The American Way ➢ What's In It for Me? How and Why to Participate in Standards Development ➢ Exam
	Weblink	http://www.standardslearn.org/coursedetails.aspx?key=2

**** Prepared by the Project Editor***

****Based on ANSI website***

D76. USA – IP-Shield - Copyright Aware™ (Annex.B #97)

Title (weblink)	Copyright Aware™ (weblink: www.ip-shield.com)
Operator (website)	Intellectual Property Shield (website: www.ip-shield.com)
Type	P6 Multi-targets (Anyone working with copyrighted technical documents)
Learning Objectives	In this program, the audience (students) learn : ✓ The general concept of a copyright; ✓ To recognize what types of works are protected by copyright; ✓ To understand what can and cannot be done with copyrighted materials; ✓ To understand the narrow limits of "fair use" of copyrighted material; ✓ To recognize examples of copyright infringement, and understand the ramifications of copyright infringement
Year (participants)	✓ 2006 (73 Students, course introduced late 2006) ✓ 2007 (256 Students to date)
Operation Summary	✓ **System Requirements:** PC or Mac with a standard browser, Flash player and an internet connection. ✓ **Course Format**: the interactive course includes 6 lessons in multi-media format, including audio and embedded quizzes. ✓ Users can immediately review topics they do not fully understand when quizzed. ✓ **Continuous Tracking**: user's progress is continuously tracked, and the course provides feedback following question/answer sessions. ✓ **Time**: under 60 minutes to take the course and become certified. ✓ **Certification:** a printable certificate of completion is produced, and an email notification can be sent to a manager or training coordinator. ✓ Course can be translated to other languages or given by instructor

**** Submitted by (please contact following person for further information):***

Economy	US
Org/Ministry	IP-Shield.com
Position	
Name	John Toth
Phone, Email	1-720-226-9108 john.toth@ip-shield.com

D77. USA – UL – Private workshops (Annex.B #99)

Title 3 **(weblink)**	Private Workshops Focused on the US Standards and Conformity Assessment System Example: 2007 ASEAN-US Workshop on Standards and Conformity Assessment for Consumer Electronics and Electrical Appliances (weblink: www.uluniversity.com)	
Operator **(website)**	Underwriters Laboratories Inc, UL University (website: www.uluniversity.com)	
Type **(Target Groups)**	P5) Standards development - Chair/secretariat Associate Southeast Asian Nations (ASEAN) Secretariat officials and their technical experts.	
Learning **Objectives**	In this program, the audience (students) learn : ✓ Methods used for the development of US consensus based standards. ✓ US Government roles and responsibilities in development of US safety standards. ✓ Design principles for manufacturing safe products. ✓ Conformity assessment processes utilized for products sold in the United States. ✓ Market Surveillance Activities carried out by private bodies and US government. ✓ Product compliance enforcement in the United States.	
Year (participants)	✓ 2007 – 30 student representatives from various ASEAN countries	
Operation **Summary**	This Workshop was designed as a 16-hour module presented, in person, by UL Subject Matter Experts in Conformity Assessment Services, Government Affairs, and Market Surveillance activities. The format for instruction included lecture, question and answer sessions, small-group discussion and activities, and social engagement.	
Textbook(Syllabus)	Title	*(language)*

or Curriculum Summary	Authors, Publisher, Year	Course materials and presentations were developed by the UL staff carrying out the in-person instruction.
	Table of contents (curriculum or Syllabus)	• **Developing Standards for Electrical and Electronic Equipment** Development methodologies, processes, and administration of consensus-based product safety standards: o Consensus-based standards – How are they developed? What is their value for industry? o International standards development activities. o US Government roles and responsibilities in standards development. • **Engineering processes and product safety design strategies for Hazard-Based Safety Engineering (HBSE), a framework for anticipating and mitigating risks in designing products, in order to increase compliance with relevant product safety standards**
		• **Overview of US Conformity Assessment System** o Principles of Conformity Assessment. o Drivers for Conformity Assessment. o Relevant stakeholder s (public and private) in the US CA System • **Product Evaluations** • **Market Surveillance** o Testing or inspection of samples from the marketplace. o Testing or inspection of samples from the factory. o Quality System Audits o Assessment of production processes.

		○ Investigation of field incidents. ○ Implementing corrective actions. • **Compliance Enforcement – Government Regulations and Internal Obligations,** ○ Government oversight - roles and responsibilities ○ Government regulations for enforcing product safety. ○ Product recall authority of the Government. ○ Self-regulation and voluntary compliance. ○ Consumer product safety legal framework. ○ Implications for free trade agreements and WTO obligations.
	Weblink	http://www.uluniversity.com

**** Submitted by (please contact following person for further information):***

Economy	USA
Org/Ministry	Underwriters Laboratories Inc. /UL University
Position	Manager, International Affairs
Name	Erin Grossi
Phone, Email	202-296-7841 Erin.Grossi@us.ul.com

D78. USA – UL – Competency Based Skills (Annex.B #100)

Title 2 **(weblink)**	Competency Based Skills for Authorities Having Jurisdiction Example: Classified US Government Laboratory (weblink: www.uluniversity.com)
Operator(website)	Underwriters Laboratories Inc, UL University(www.uluniversity.com)
Type **(Target Groups)**	P6) Multi-targets or Unspecified parties Attendees and audiences include authorities having jurisdiction – government officials, engineers and technicians, business managers and business working level staff (please use 'Type' in question used in 2.1)
Learning **Objectives**	In this program, the audience (students) learn: ✓ Inspection and assessment methods for evaluating product safety conformance. ✓ Conformity assessment practices and their related value. ✓ Interpretation and application of product safety codes. ✓ Evaluation and testing methods for specific consumer products.
Year **(participants)**	✓ 2006 - 60 students (Tier 1) ✓ 2007 – tier 2 pending
Operation **Summary**	UL University has worked with a classified national security facility (laboratory) within the US Department of Energy. This research and development laboratory develops and evaluates many sophisticated technologies such as high-powered computers, advanced lasers, and nuclear materials. Laboratory staff install their own electrical/electronic control equipment (e.g. switches, wiring, industrial control panels, etc.) because of the level of sophistication of the products on site that are drawing on the site's energy sources. UL University has developed a customized course for government officials, laboratory engineers, and authorities having jurisdiction that have to approve the laboratory's installation of electrical equipment, to make sure these individuals understand how to accurately evaluate, inspect, and approve the electrical equipment and the installation practices used at this national laboratory. This course is part of the national laboratory's program to ensure workplace safety.

Textbook(Syllabus) or Curriculum Summary	Title	*(language)*
	Authors, Publisher, Year	All materials for this course is either primary sources (e.g. the standards covering electrical products and their installation) or customized presentations developed by UL engineers to explain proper electrical installations.
	Table of contents (curriculum or Syllabus)	Tiered approach to competency development : Tier 1 – Core Knowledge (16 hrs) • Structure and Development of Standards • Roles of Nationally Recognized Testing Laboratory (NRTL) • Regulations Governing Federal Sites • Use of On-Line Certifications Directory Tier 2 – Specific Product Knowledge • Hazard Based Safety Engineering • National Electrical Code • Electrical Safety in the Workplace • UL standards specific to products for inspection Tier 3 – Inspector Certification • Non-destructive Testing • Test Equipment Selection • Inspection Techniques • Test Performance and Data Interpretation
	Weblink	(if available): www.uluniversity.com

**** Submitted by (please contact following person for further information):***

Economy	USA
Org/Ministry	Underwriters Laboratories Inc. /UL University
Position	Manager, International Affairs
Name	Erin Grossi
Phone, Email	202-296-7841 Erin.Grossi@us.ul.com

D79. USA – UL – Standards Based Education (Annex.B #101)

Title 1 **(weblink)**	Standards Based Education (weblink: www.uluniversity.com)
Operator **(website)**	Underwriters Laboratories Inc, UL University (website: www.uluniversity.com)
Type **(Target Groups)**	P6) Multi-targets or Unspecified parties Attendees and audiences include conformity assessment engineers – business working level staff, business managers, authorities having jurisdiction – government officials, professional licensed individuals – professional engineers, and electricians.
Learning **Objectives**	In this program, the audience (students) learn : ✓ Overview of the standards, their intent and how to interpret them correctly. ✓ Hands-on experience with test methods and conformity assessment practices related to the standard. ✓ Interpretation and application of product safety codes and their relationship to the standard.
Year **(participants)**	✓ 2005 – over 30,000 students ✓ 2006 – over 32,000 students
Operation **Summary**	UL has provided education and training on standards and conformance principles since its inception in 1894. Through our working relationships and experience in a wide range of technical and industry areas, UL has firsthand knowledge and understanding of the challenges faced at every stage of the product life cycle. UL University was established as a unique business division within UL, singularly devoted to training and consulting, in 2001. UL University has developed a global presence for itself and an established record of providing technical expertise and education in the majority of the APEC countries. Educational sessions may be offered in public, open forum sessions or private, customized on-site sessions in various delivery formats to include instructor-led classroom activities, live web-based instruction, computer-based training, web-based training, teleconference question and answer sessions, and videoconference instruction. UL University courses have been audited by the International Association for Continuing Education and Training and have been approved to award adult continuing education units (CEU's). Many ULU courses include methods to evaluate the transfer of learning through written examinations, performance based activities and exercises, end-of-module skill checks, and structured instructor led oral questioning.

	One example of Standards Based Education that UL University recently executed was a program in China for a Chinese company that is a major manufacturer of consumer products sold worldwide. This training covered UL's suite of standards related household refrigerators. 16 hours were devoted to training on the content of the standards and their proper interpretation, and another 16 hours was devoted to conducting actual hands-on product safety testing activities (conformity assessment) based on the related standards. ULU followed-up this program with a written-assessment of the Chinese companies' engineers to determine how much of the information provided in the training had been retained. The company used the results of this examination as part of its own performance-evaluation of its engineering staff.	
Textbook(Syllabus) or Curriculum Summary	Title	*(language)*
	Authors, Publisher, Year	The literature ULU uses for these courses is primarily the actual standards themselves (primary resources) and course packets designed by UL engineers with expertise in the particular area being covered.
	Table of contents (curriculum or Syllabus)	Course outlines for each offering can be obtained at www.uluniversity.com
	Weblink	www.uluniversity.com

**** Submitted by (please contact following person for further information):***

Economy	USA
Org/Ministry	Underwriters Laboratories Inc. /UL University
Position	Manager, International Affairs
Name	Erin Grossi
Phone, Email	202-296-7841 Erin.Grossi@us.ul.com

D80. Vietnam – QTC Training Center (Annex.B #102)

Title (weblink)	Training Centre (weblink: www.tcvn.gov.vn)	
Operator(website)	SMQ (website: www.tcvn.gov.vn)	
Type	all	
Learning Objectives	In this program, the audience (students) learn : ✓ Basic knowledges like the concepts, the role of standards and standardisation, standards-setting process, standards harmonisation,	
Year (participants)	✓ 600- 700 Participants (2006- 2007)	
Operation	✓ in SMQ Training Centre and in other places (Direct Training)	
Textbook(Syllabus) or Curriculum Summary	Title	Training material : Background for Sandards and Standardisation *(language: Vietnamese)*
	Authors	Officers of Training Centre
	Table of contents (curriculum or Syllabus)	■ Overview ■ Concepts ■ Type of standards ■ Role of standards ■ International standards ■ Conformity accessment ■ Hamonisation ■ Standards preparations ■ International Guides and rules
	Weblink	N.A

**** Submitted by (please contact following person for further information):***

Economy	Vietnam
Org/Ministry	STAMEQ
Position	Deputy Director of SMQ Training Centre
Name	Luong Viet Cuong (Mr.)
Phone, Email	Phone: 84-4 8361 407/7564 246; E-mail: cuongld@fpt.vn

<Annex D81 to D88>

Detailed Fact Sheets for
Broad Education Practices
(mainly by international organizations)

D81. APEC – Standards Education Program Phase I (Annex.B #103)

Title **(weblink)**	**APEC Strategic Standards Education Program:** **Phase I – Case Studies and Curricula Development** (www.apec.org)
Operator **(website)**	APEC SCSC PAGE(Project Advisory Group on Education) and KSA(Korean Standards Association)
Type **(Target Groups)**	General - Focusing on Higher Education (University Students)
Project **Objectives**	This project is a strategic approach to capacity building of the APEC member economies in the area of standards and conformance. The purpose of this project is to develop education model on standards and conformance to increase public awareness mainly in higher education systems and to build capacity in a more strategic and comprehensive manner. • **Case Studies** (previous and current capacity building activities) • **Strategic Model curricula for Standards Education** Any APEC member economies (ministries, standards organizations, universities, businesses) which would like to introduce standards education/training course within their economy could refer to the two reports; cases and recommended curricula.
Year (participants)	✓ March 2007 – Feb 2008
Operation	This guideline is the outcome of the phase I project

**** Submitted by (please contact following person for further information):***

Economy	Korea
Org/Ministry	Korean Standards Association
Position	Senior Standards Analyst, APEC Education Project Editor
Name	Mr. Donggeun Choi
Phone, Email	+82-2-6009-4828, its2win@kisi.or.kr

D82.

D83. APEC – Standards Education Program Phase II (Annex.B #104)

Title **(weblink)**	**APEC SCSC Strategic Education Program for Trade Facilitation: Phase II - Textbooks and Teaching Manual Development** (www.apec.org)
Operator **(website)**	APEC SCSC PAGE(Project Advisory Group on Education) and its secretariat KSA(Korean Standards Association)
Type **(Target Groups)**	General - Focusing on Higher Education (University Students)
Project Objectives	The key objectives of this Phase II project, for eighteen months from Jan 2008 to Jun 2009, are to develop practical textbooks and teaching manual, rather than theoretical ones. The expected specific outcomes will be two textbooks and one teaching manual: 1) **Textbook I – Basic Essentials** ✓ Textbook I will provide essential information such as definition, history, process, general aspects, theory, key issues in the area of standards and conformance 2) **Textbook II – Case Studies** ✓ Textbook II will highlight various aspects of standards and conformance in trade based on market practices – mainly for businesses and graduate students like MBA 3) **Teaching manual** ✓ Teaching manual will provide guidelines for teachers/trainers how to deliver the two proposed textbooks for different target groups. The target beneficiaries of this project are university students and business communities: 1) **University students** – undergraduate and graduate 2) **Businesses, particularly SMEs** – executives, managers and working level staff
Year (participants)	✓ March 2008 – Oct 2009
Operation	This guideline is the outcome of the phase I project

**** Submitted by (please contact following person for further information):***

Economy	Korea
Org/Ministry	Korean Standards Association
Position	Senior Standards Analyst, APEC Education Project Editor
Name	Mr. Donggeun Choi
Phone, Email	+82-2-6009-4828, its2win@kisi.or.kr

D84. CEN - COPRAS interactive guideline (Annex.B #106)

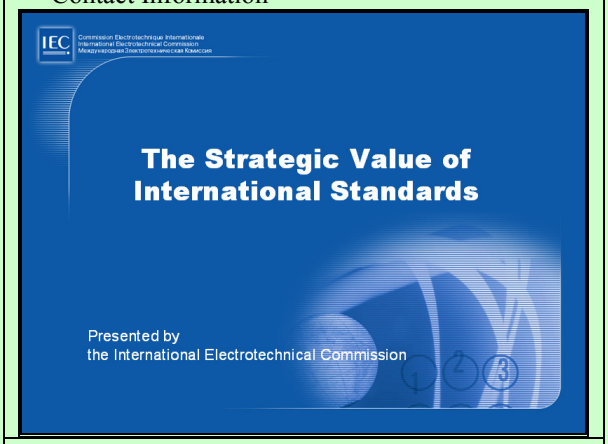
Title **(weblink)**	COPRAS interactive generic guidelines (weblink: http://www.w3.org/2004/copras/)
Operator	CEN, W3C, et al
Type **(Target Groups)**	P7 - Provision of education-like information about ICT standards-making to European Union-supported research projects
Learning **Objectives**	In this program, the audience (students) learn : ✓ Basic information about ICT standardization and the hundreds of organizations carrying it out ✓ How to choose a standards body ✓ How to participate ✓ How to start new work, etc
Year	✓ Web site has an enormous number of hits
Operation **Summary**	✓ This project has produced an interactive set of web pages (interactive guidelines) – this is the principal « learning tool » but it is one that the five COPRAS partner bodies are committed to developing further and improving ✓ Other COPRAS activities and deliverables are recorded on the web site 

**** Submitted by (please contact following person for further information):***

Economy	CEN
Org/Ministry	CEN (European Standards Committee)
Position	Director, Pre-Standards
Name	John Ketchell
Phone, Email	+32 2 550 0846, john.ketchell@cen.eu

D85. IEC and Academia – Lecture Series I (Annex.B #109)

Title (website)	IEC and Academia – IEC Lecture Series (website: www.iec.ch/academia/lectures.htm)	
Operator (website)	IEC (www.iec.ch/academia)	
Type (Target Groups)		
Learning Objectives		
Year (participants)		
Operation Summary		
Textbook(Syllabus) or Curriculum Summary	Title:	IEC Lecture Series Ⅰ(2005)
	Authors, Publisher, Year	2005
	Table of contents (curriculum or Syllabus)	International Standardization in Business, Industry, Society and Technology •
		<u>Lecture 1</u>: The Strategic Value of International Standards • Introduction • Standards influence everything we do • Historical Significance of Standards • Competitive Advantage • Value of International Standards • IEC International Stnadards • World Trade Organization • Nature of the Development Process • Analysis and Preparation • International Standards Consequences • Strategic Value of International Standards • IEP Perspectives on the value of standards • Access to Global Markets • Access to Strategic Information • Access to Strategic Partnership • Reducing Costs and Improving performances • Consensus Management • Developing Procedure • IEC Developing Procedure

		• Expected Value of a Standard • A Standard's Structure • IEC Standards Example • Scope • Normative References • Definition • Symbols and Units • Test Procedures • Acceptance Criteria • Effective Data • Conformity Assessment • IEC Conformity Assessment Schemes • International Consensus & Government Standards • Government Incorporation by Reference • Global Engineering Tools • Contact Information 
		<u>Lecture 2</u>: The International Electrotechnical Commission • The Vision • IEC • Mission • Objectives • International Nexus • Organization & Structure • World Standards Cooperation • IEC Master Plan 2000 • A Vision for the 21st Century • Contact Information
	Weblink	website: www.iec.ch/academia/lectures.htm

**** Prepared by the Project Editor***

****Based on IEC website***

D86. IEC and Academia – Lecture Series II (Annex.B #110)

Title (website)	IEC and Academia – IEC Lecture Series II (website: www.iec.ch/academia/lectures.htm)	
Operator (website)	IEC (www.iec.ch/academia)	
Type (Target Groups)		
Learning Objectives		
Year (participants)		
Operation Summary		
Textbook(Syllabus) or Curriculum Summary	Title:	IEC Lecture Series Ⅱ（2007）
	Authors, Publisher, Year	2007
	Table of contents (curriculum or Syllabus)	The Importance of Standards
		<u>Lecture 1</u>: Introduction to Standards • Aim • Contents • Successful Standards go unnoticed. • Standards are everywhere! • What is a standard? • Many definitions of Standard • Why are standards important? • Causes for the increasing importance of Stsndards • Why Participate in Making Standards? • Why Not Participate in Standards Making? • Many Kinds of Standards • What Aspect Is Standardized? • What Type of Standard is at Stake? • When Does Standardization take Place? • In-depth Example of a Standard • Summary • Contact Information

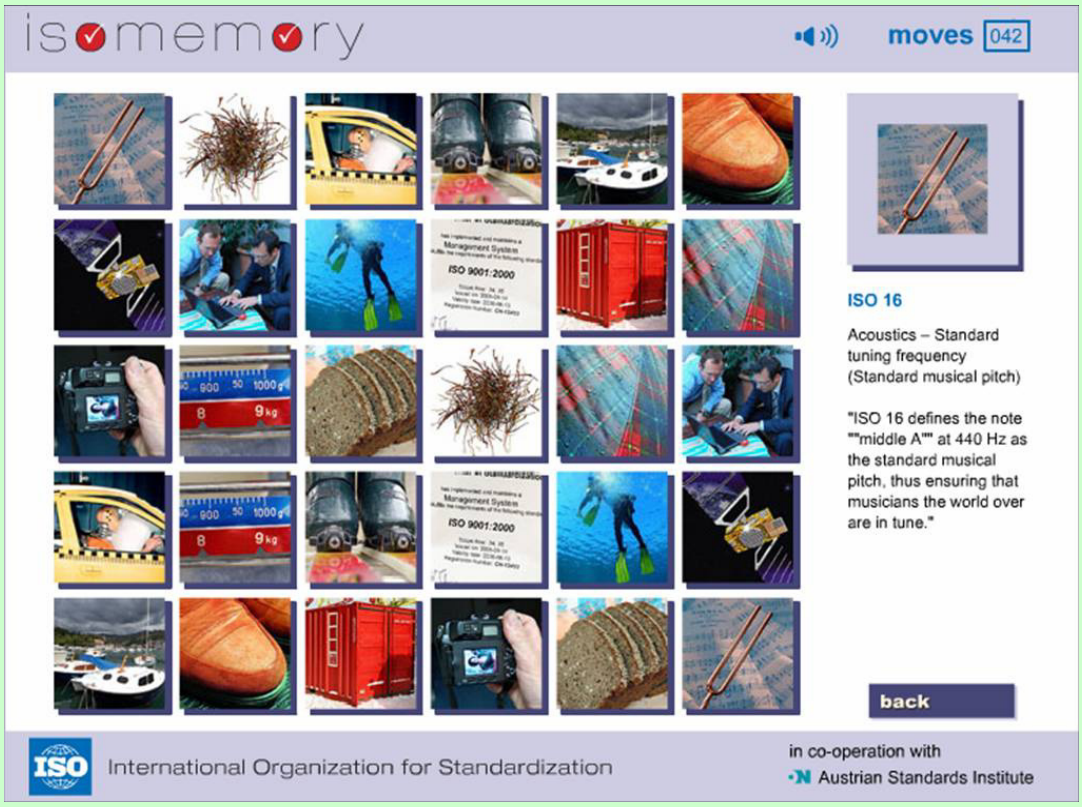
		<u>Lecture 2</u>: Life Cycle of Standards • Aim • Contents • The Life Cycle of a Standard • Standards Development • After Standards have been developed • Standards Implementation • Maintenance • Standards Dynamics • Summary • Contact Information •
		<u>Lecture 3</u>: The Economic Value of Standards • Aim • Content • Introduction • Economic Benefits of Standardization • Economic Costs of Standardization • Basic Concepts in the Economics of Standardization • Economies of Scale • Free Rider Problem • Information Asymmetry • Transaction Costs • Network Externalities • Switching Costs • Excess Inertia and Lock-in • Bandwagon Effect • Standards and Innovation • Influence of Standards on Innovation • Timing of Standardization • Technology Life Cycle • Technology Maturity and Standardization Timing • Standards and Trade • Trade Example • Trade Barriers • Summarizing the Benefits • Acknowledgement • Contact Information
	Weblink	website: www.iec.ch/academia/lectures.htm

**** Prepared by the Project Editor***

****Based on IEC website***

D87. ISO – isomemory (online game for ISO standards) (Annex.B #115)

Title **(website)**	isomemory (online game for ISO standards) (www.iso.org)
Operator **(website)**	ISO Central Secretariat ((http://www.iso.org/iso/en/commcentre/isomemory/startpage.html))
Type **(Target Groups)**	All – Easy and Fun online puzzle game to learn various ISO standards
Learning **Objectives**	Why don't you learn about ISO standards in daily life – Standars are every where whether you recongnize it or not. Enjoy it with online game.
Year **(participants)**	2006-
Operation **Summary**	The isomemory game, about standards, is a joint production of ON Austria Standards Institute (www.on-norm.at) and ISO Central Secretariat (www.iso.org)



** Prepared by the Project Editor*

**Based onISO website*

D88. SES – Certification Program (Annex.B #116)

Title **(website)**	Stnadards Engineering Society (website: www.ses-standards.org/displaycommon.cfm?an=3)	
Operator **(website)**	SES (website: www.ses-standards.org)	
Type **(Target Groups)**	All – Certification Program for Standards Professional	
Learning **Objectives**	The Certificatino is to recognize persons who have demonstrated a high degree of professional competence in different areas of standards.	
Year **(participants)**	N/A	
Operation **Summary**	As part of its mission to enhance knowledge of standards and standardization, the Standards Engineering Society (SES) provides a description and schedule for courses taught in the United States and Canada on standards, standardization, and related subjects	
Textbook(Syllabus) **or Curriculum** **Summary**	Title:	A Guide to Standars (SES course)
	Authors, Publisher, Year	
	Table of contents (curriculum or Syllabus)	SES offers two levels of certification: (1) "AStd" is an entry level that demonstrates a fundamental knowledge of standards and application, and (2) "CStd" is a standards professional certification that demonstrates a thorough, more sophistication knowledge of the principles, techniques and effects of standardization and recognizes a persons experience, expertise and contributions in the area of standards. The "CStd" level offers four specific interest categories: standards development, standards application, standards management, and standards information.
	Weblink	www.ses-standards.org/displaycommon.cfm?an=3

**** Prepared by the Project Editor***

****Based onSES website***

D89. UNECE WP6 – Recommendation "I" (Annex.B #117)

Title	UNECE Recommendation "I" Methodological studies and education (first version adopted in 1970)
Operator	UNECE WP.6 (Working Party on Regulatory Cooperation and Standardization Policies) (http://www.unece.org/trade/wp6/)
Target Groups	General Recommendation
Introduction to UNECE WP6	✓ The WP.6 is an intergovernmental group of experts engaged in providing a forum for debate on issues of concern to Governments, elaborating recommendations and good practices on a variety of policy matters relating to technical regulations, standardization; conformity assessment (testing, certification, inspection, etc.); accreditation; market surveillance; quality/environmental management systems and metrology.
Full text of UNECE WP6 Recommendation I	I. METHODOLOGICAL STUDIES AND EDUCATION The Working Party on Technical Harmonization and Standardization Policies has agreed to recommend that: I.1 ECE Governments should, in collaboration with appropriate intergovernmental and other organizations and taking into account the activities of the International Organization for Standardization (ISO) and the International Electro-technical Commission (IEC), consider the possibility of encouraging: ➢ the introduction of the subject of standardization into the scientific and technological curricula of educational establishments; ➢ the education and training of specialists in standardization; ➢ the further study in depth of the methodology of standardization supported by international collaboration. *Note.* *Published in the UNECE document ECE/STAND/17/Rev.4* *« UNECE Recomendations on Standardization Policies »*

**** Submitted by (please contact following person for further information):***

Economy	UNECE
Org/Ministry	UNECE WP6
Position	Secretary of WP6
Name	Mr. (Dr.) Serguei Kouzmine
Phone, Email	serguei.kouzmine@unece.org

Annex E

Surveyed Lessons Learned from Standards Education Practices

E1. Japan – METI Standards Education Delivery Service (Annex.B #1)

Lesson Title	<Category: Operation> Standards Education Delivery Service (Lectures on Demand)
Date	(09/2006-02/2007)
Context (guide: 1~2 paragraphs)	Students can learn importance of standards through examples of commodities and industrial products for which standards are used in their daily life. They also discuss about what kind of standards will be effective in society and needed in future.
Lesson Learned (guide: 0.5 ~1.5 pages)	✓ Quiz and group works and actual sample of commodities/products are effective to attract students. ✓ If the teacher use quiz or group work, 45-50 minutes are not enough to teach all of textbook contents. When having 45-50 lectures, teachers should focus their teaching contents to one main theme. ✓ When teachers lecture technical college students, they should take into account the students' special knowledge.
Source Reference	Teachers questionnaire (n = 42)

**** Submitted by (please contact following person for further information):***

Economy	Japan
Org/Ministry	Ministry of Economy, Trade and Industry
Position	Sector Chief
Name	Akiko Kawai
Phone, Email	+81-3-3501-9471, kawai-akiko@meti.go.jp

E2. Philippines – BPS in DTI (Annex.B #4)

Lesson Title	The youth are a strong influence to the purchasing decisions of their families, peers, schools, and communities. Educating them on the concepts and significance of standards on products and services and having them involved in purchasing decisions at a young age would mold them into vigilant consumers and responsible citizens of the country.
Date	13, 14 & 18 December 2006: DTI(BPS)-DepEd(BALS)-PPSQF Validation Of Draft Modules On Standards For Prioritized Products 20-22 March 2007: DTI(BPS)-DepEd(BSE)-PPSQF Validation Of Draft Lesson Plans On Standards For Prioritized Products
Context (guide: 1~2 paragraphs)	The Filipino youth's awareness on product quality and safety is low. The BPS' scarce resources limit the conduct of promotional activities and publication materials on standards to inform the youth as consumers. Thus, the BPS designed a program that would hopefully properly educate the youth through the country's education system. BPS identified the need to include the concepts and significance of standards in the curricula of the secondary and alternative education through modules and lesson plans on standards. These modules and lesson plans are teaching materials for the secondary teachers and IMs/ mobile teachers to assist them in making the youth realize that standards are indeed significant for the performance of the product and its safe use.
Lesson Learned (guide: 0.5 ~1.5 pages)	Although the BPS has an existing program for the undergraduate students to appreciate the significance of standards in their everyday lives, the BPS felt that the impact of making the students aware has not been achieved. Thus, the BPS identified the high school or secondary level students to be its voice in spreading the use and relevance of standards. The modules and lesson plans on standards that were prepared by the BPS in cooperation with the Department of Education were designed to be easy to read, situational and interactive. These modules and lesson plans were finalized according to the students' needs. Definitions, concepts, examples, exercises, experiments, materials, stories, photographs, and images were used for the students to understand easily. To verify if these materials are easily understood, a series of validation activities were conducted in several mobile centers and schools. The instructional managers and high school teachers were requested to use the modules and lesson plans in their classes. The BPS and its partners were present to observe the demonstration. Right after, the IMs and teachers were further requested to comment on the teaching materials that they used for improvements. Through the validation activities, the teachers and students realized that indeed, standards are part of their everyday lives; that each one of them is responsible in making sure that they are using products and services that comply with standards; that products are inspected for their

	expected performance and safety. The comments gathered were discussed and eventually incorporated in the final copies of the modules and lesson plans.
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	Philippines
Org/Ministry	Bureau of Product Standards – Department of Trade and Industry
Position	Head, Standards Promotions and Media Relations
Name	Ms. Marie Camille B. Castillo
Phone, Email	(632) 751-4740; CamilleCastillo@dti.gov.ph

E3. Thailand – TISI (Annex.B #6)

Lesson Title	Integrating Standardization in Livings, Occupation and Technology
Date	(01-2003)
Context (guide: 1~2 paragraphs)	Standardization is considered as a significant factor to develop industry and increase the quality of life as it enhances the quality of products and ensures consumer safety. Thai Industrial Standards Institute has been promoting the significance of standardization to different groups of stakeholders. We realize that school teachers have vital roles to educate the importance of standardization to our youth so that they are able to apply what they have learnt to their occupation and their daily lives.
Lesson Learned (guide: 0.5 ~1.5 pages)	Training on the integration of standardization in livings, occupation and technology begins with giving general knowledge on standardizations such as its definition and principle, process of standard development and standard using to teachers so that they will gain adequate knowledge and understanding to educate their students. Then, the teachers learn the process of integrating standardization in livings, occupation and technology. The teachers are divided into groups to do some exercises on developing teaching and learning plans to integrate standardization in livings, occupation and technology therefore they can put them into practice.
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	Thailand
Org/Ministry	Standardization Promotion and Development Division Thai Industrial Standards Institute (TISI) Ministry of Industry
Position	Director
Name	Ms. Chaowalee Ratanamungmeka
Phone, Email	(66 2) 202 3427, chaowlee@tisi.go.th

E4. France – ZFIB (Annex.B #20)

Lesson Title	Teaching in Simulation, Examples of real life, Multi-disciplinary
Date	
Context (guide: 1~2 paragraphs)	Engineer Schools Questions : standards not always the best tehcnological solution (as it has to be a consensus)- Standardization versus innovation
Lesson Learned (guide: 0.5 ~1.5 pages)	Business cases are essential, mainly when built and developed by the students A simulation tool to simulate the debates and have the consensus issue well understood should be a good idea. When the course is theoretical it is not well received- the students want examples of the real life The level of interest and knowledge about standardization is very poor at the start point of the cycles. Standardization has to be taught as a discipline integtrated in economic, legal , technological and social life of a company. It has to be shown as an element of the business intelligence.
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	France
Org/Ministry	Company : ZFIB Conseil EURL
Position	Manager
Name	Miss Bousquet Françoise
Phone, Email	+ 33 1 43 48 43 69 francoise.bousquet@zfib.com

E5. Korea – KSA – UEPS program (Annex.B #27) (includes 8 lessons)

Lesson #1	Planning - Cooperate with them and have a leader and a coordinator
Date	2004-2007 in KSA-UEPS Program
Context	Driving a program with out a coordinator and a leader? No way!
Lesson Learned (guide: 0.5 ~1.5 pages)	For driving the program, there must be a leader and a coordinator to handle this. Standards related organization like a case of Korea, is the best suitable for organizing such education program. Therefore, use standards related organizations as much as possible,
Lesson #2	Planning: Have clear objectives.
Date	2004-2007 in KSA-UEPS Program
Context (guide: 1~2 paragraphs)	The framework of the program must be differentiated according to objectives. "Increasing awareness of importance of standards" and "Nurturing standards experts" are very different education objectives.
Lesson Learned (guide: 0.5 ~1.5 pages)	With unclear objectives, education program might go different ways. If the objectives are mixed with "exposing students to standard itself" and "train students for making specialists", the curriculum would be messed up as well as students get confused. Have clear objectives, then it would be much easier to make further plans.
Lesson #3	Make consensus of education on standardization among industry, academia, government and standards related organizations.
Date	2004-2007 in KSA-UEPS Program
Context (guide: 1~2 paragraphs)	'Education on Standardization' is a complicated subject to teach. It is impossible for academia to handle it. From the beginning it should be a triangle(academia-industry-government must including standards related organization) cooperated program.
Lesson Learned (guide: 0.5 ~1.5 pages)	Different from other courses, the subject 'standards' is not just an academic thing. It is related with technology, legal systems and government policies. This kind of education program needs a vivid voice of field experts, academic base, financial and administrative supports. From the planning, if the consensus of the importance of education on standardization is not made among academia-industry-government, it would be hard to even start it. Like a case of Korea, from the very beginning, make consensus of education on standardization by getting financial support from government, by gathering participating universities and by obtaining participating lecturers from industries..
Lesson #4	Harmonize students' needs with teachers' needs - Attract students attention(One picture is worth a thousand words)
Date	2004-2007 in KSA-UEPS Program
Context (guide: 1~2 paragraphs)	For teachers, there are must-teach contents while students want to learn easy and fun things. 'Standard' is a difficult subject for students to find it easy and fun, however, only customizing students' taste doesn't make sense. Harmony is the key! Students are MTV generation. They are accustomed to visualized education materials. Also they want more than academic things.
Lesson	Standards include procedures, legal systems, etc which seems to be

Learned (guide: 0.5 ~1.5 pages)	boring to learn in the class. However, there are some examples and cases to help to explain easily. Therefore, textbook as well as teaching materials should mix theory and examples and cases appropriately. For examples, after explaining how to make international standards and effects, 'success and failure of international standards' is introduced. Also, for teaching materials, visualized education materials such as case pictures, colorful PPT slides, and moving pictures are very effective. Moreover, students love field experts' lectures because they give students their experiences and know-how. So team-teaching methods that consist of standards experts from various fields make class more fun and energetic. Moreover, fieldtrip is the excellent opportunity for students to learn how standards are used in the real world, not just from the textbook.
Lesson #5	Have a interactive education program
Date	2004-2007 in KSA-UEPS Program
Context (guide: 1~2 paragraphs)	Sharing information and opinions with students and teachers is important, and even teachers learn from each other.
Lesson Learned (guide: 0.5 ~1.5 pages)	This also related with lesson 1 & 2. As all knows, interactive class is effective. Have a project presentation in curriculum. Give students several report subject and encourage them to make a presentation about it, discussing and sharing opinions. Also, use website as a databank and a forum where students and lecturers can exchange opinions. This can be not only a place where lecture materials can be uploaded and downloaded but also a space where lecturers share lecture materials and related materials as well as communicate with students and lecturers.

Lesson #6	Teach the teachers.
Date	2004-2007 in KSA-UEPS Program
Context (guide: 1~2 paragraphs)	Sometimes standards experts are lack of teaching skills, and professors also need to learn standards continuously.
Lesson Learned (guide: 0.5 ~1.5 pages)	Teaching experiences and skills are not in proportion to knowledge. Some standards experts, even professors who are very well-known as standards experts don't have a good evaluation from students. Also teachers (professors) need to learn standards continuously because standardization covers a wide range of topics. Therefore, Korea provides teachers standardization course and workshops (seminars) regularly to teach the teachers and help them communicate each other.
Lesson #7	Make the program mandatory.
Date	2004-2007 in KSA-UEPS Program
Context (guide: 1~2 paragraphs)	In Korea, some universities are running the program as a mandatory for engineering students or a ABEEK (Accreditation Board for Engineering Education of Korea) certified program.
Lesson Learned (guide: 0.5 ~1.5 pages)	Even though the program is supported by industry and government, for continuing the program, university should make the class mandatory. This will help to get appropriate number of students and to publicize the importance of the education on standardization. Also, without outside

	support, it will be easy for universities to run the program by themselves.
Lesson #8	One of the best methods in promotion is to use the word of mouth among students.
Date	2004-2007 in KSA-UEPS Program
Context (guide: 1~2 paragraphs)	For promoting the education program, the word of mouth among students is the most effective way. After monitoring class, students' opinions and feedbacks can be the best data to develop the program.
Lesson Learned (guide: 0.5 ~1.5 pages)	Students evaluate lectures and class every semester. The feedback from the students is a sound basis for analyzing and upgrading the program. Based on the results of the survey, curriculums and lecturers can be rearranged. Even though the contents of the program are good, if students don't give a good evaluation, it would be easy to cancel the class. Use the word of mouth among students. To give students who achieve more than a B+ grade a certificate is the one carrot approach.

-
- ***Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Researcher
Name	Danbee KIM
Phone, Email	82-2-6009-4845, emailkim@ksa.or.kr

E6. Netherland – RSM Erasmus Univ. (Annex.B #28)

Lesson Title	Several courses on standardization in The Netherlands
Date	
Context (guide: 1~2 paragraphs)	Most difficult is to attract students. At first glance the topic seems to be dull. Once students get acquainted with standardization and understand its importance they become enthusiastic. I have no real solution yet to solve this problem.
Lesson Learned (guide: 0.5 ~1.5 pages)	See my publication: Vries, Henk J. de (2005) 'Standardization Education.' In: Manfred J. Holler & Esko Niskanen (Eds.) *EURAS Yearbook of Standardization*, Vol. 5. Special issue of *Homo Oecunomicus*, **22**, 1, 71-91.
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	Netherlands
Org/Ministry	RSM Erasmus University
Position	Associate Professor Standardization
Name	Henk de Vries
Phone, Email	+31 10 408 20 02 / hvries@rsm.nl

E7. Sri Lanka – University of Moratuwa (Annex.B #30)

Lesson Title	Improvement of the subject module through student feedback (both content and delivery)
Date	(11-2006)
Context (guide: 1~2 paragraphs)	Many participants did not have any previous experience about standardization in the industry. This was the first time they came across the fundamentals of standards and standardization. The content of the subject needs to be changed in order to make it easier to understand and more useful in the Sri Lankan context.
Lesson Learned (guide: 0.5 ~1.5 pages)	1. There is need to introduce an introductory course in standardization at undergraduate level. 2. To benefit from the module the industry too realize the importance of the subject area and get there employees involved in the process of in company standardization and National level standardization activities. 3. This module of standardization is suitable for two of the MBA program at the University (i.e. Management of Technology and Information Technology) 4. Participants prefer to learn through 'Case studies' than mere theory only. 5. The quality management component in the module needs to be reduced or offered a separate module to allow more time for standardization issues.
Source Reference	Student feedback on the Quality Management & Standardization Module

**** Submitted by (please contact following person for further information):***

Economy	Sri Lanka
Org/Ministry	University of Moratuwa, Sri Lanka
Position	Professor
Name	Niranjan D. Gunawardena
Phone, Email	+94112650301; ndg@civil.mrt.ac.lk

E8. USA – Faulkner University (Annex.B #35)

Lesson Title	Teaching Method
Date	*04-2007*
Context (guide: 1~2 paragraphs)	Classroom discussion with Internet access to selected standards…
Lesson Learned (guide: 0.5 ~1.5 pages)	Access to the selected standards has been problematic at best…logins have not worked successfully and students have yet to see actual standards. Standards are discussed in the course content, however, with applications made to situations relevant to the student learning environment. What I would like to see done differently is easier access to selected standards so that students could actually visit sites and study standards that applied to any design(s) they were completing for assignments. So far, this has not been accomplished but I think it would be an excellent teaching tool and would introduce students at an early level to the importance of standards. Following this exposure, instructors could discuss the standards, the constraints they provoke and trade-offs that might be necessary between two different sets of standards --- (i.e., which set most closely applies to the case or design at hand?).
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	United States of America
Org/Ministry	Faulkner University
Position	Professor of Informatics
Name	Brenda G. Turner, Ph.D.
Phone, Email	334-386-7575; bturner@faulkner.edu

E9. Malaysia – Malaysian Association of Standard Users (Annex.B #37)

Lesson Title	Training – Awareness for Teaching Professionals on Importance of Standards for Safety of Consumers
Date	(08-2006), (09-2006), (11-2006)
Context (guide: 1~2 paragraphs)	Content outline- trainers to prepare examples of materials, demonstration, games, etc to be used for the training. ▪ Introduction on Standards and Standardization – Terms and Definition; glossary ▪ How to make the subject interesting; ideas and materials to enhance understanding? ▪ Standards Development ▪ About Malaysian Standards Development & Infrastructure ▪ About consumer representation and participation ▪ National and International Standardization ▪ Standards for safety of consumer product and services ▪ Case studies
Lesson Learned (guide: 0.5 ~1.5 pages)	Evaluation was carried out for three sessions conducted. Based on the evaluation overall score of satisfaction is 4 - good (maximum score is 5 – very good) – see Annex 1 for analysis of evaluation scores. Besides some 7 percent of participants who indicated dissatisfaction on the Criteria A, B and C, all other participants indicated scores 3 or higher. The results indicated, satisfaction is either good or very good most times (between 55% to 100% of the respondents). Based on results gathered from evaluation conducted for training sessions FY 2006, teachers find the information more useful in their work (71% to 79% - find it good or very good). Among the comments or suggestions offered by participants √ The session most participants find very useful are: o Games o Slides and group activities √ Other comments o Visit schools & give talks to teachers o Give talks to teachers o Standards in Our Daily Lives o Ensure the participants stayed throughout the training session o More awareness activities should be conducted o The information on standards are beneficial o The presence & support from the regulatory agencies will benefit the participants more in terms of application of

	standards **Comments from the secretariat :** All training sessions were held on Saturdays, some of the participants come with the intention of leaving half way through the sessions, citing that they already have prior engagement/appointments. This attitude of the participants was prevalent throughout all sessions. For example, the total number of participants registered for one of the training session was 58, but only 25 turned up. The National Union of Teaching Profession (NUTP) informed that the Ministry of Education sent a last minute directive to the teachers asking them to hold extra classes on 16th September (the same Saturday the training was held). In order to impress upon the participants that the sessions are very important and that they should complete the whole day session, certificate of attendance was only awarded to those who stay on till the last session of the training. **Suggested Areas for Improvement** **1. Method / Approach** Speakers approach must involve among others: √ Choice of colours for presentation – not text heavy and legible. √ Encourage follow ups – contact point for enquiries etc. √ Perhaps prepare pre and post training evaluation **2. Materials** √ Can improve sessions through posters, display tables, video presentations etc. during breaks Future training sessions may need to target teachers training colleges in addition to teaching professionals.
Source Reference	Malaysian Association of Standard Users

**** Submitted by (please contact following person for further information):***

Economy	Malaysia
Org/Ministry	Department of Standards Malaysia
Position	Assistant Director of Standards
Name	Wan Azrin Izani bin Wan Mohd Zain/ Shahnaz Rakhmat
Phone, Email	+603-8885 8822/ 8181, wazrin@standardsmalaysia.gov.my, shahnaz@standardsmalaysia.gov.my

E10. Australia – Standards Australia – GSO (Annex.B #38)

Lesson Title	Training Seminar on Standards and Technical Regulation for Gulf Standards Organization's (GSO) Staff and Committee Members
Date	February 2006
Content (guide: 1~2 paragraphs)	• Overview and objectives of the seminar • The world of standardization • Electrotechnical standardization • International standardization other than electrotechnical • Recent ISO and IEC initiatives • Process of developing international standards • Preparing a new work item • Standards and trade • Adoption of international standards • Use of electronic tools • Downloading documents and voting • Conformity Assessment • Drafting International standards • Converting standard to international style
Lesson Learned (guide: 0.5 ~1.5 pages)	The benefits of the course were aimed to achieve the following goals: • improve the efficiency of standardization activities in the region • promote a better understanding of how technical regulation and standardization can work together to deliver solutions to improve market efficiency in the region • facilitate national standards committees to operate in a more effective manner • allow delegates from the region to have a greater influence in international standardization activities
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	Australia
Org/Ministry	Standards Australia
Position	International Team Manager
Name	Max Maffucci
Phone, Email	+61 2 8206 6710, max.maffucci@standards.org.au

E11. Australia – Standards Australia Training (Annex.B #39)

Lesson Title	'Standardization training' – One week course
Date	One week training sessions held on 'Standardization Training' (October 2006 and February 2007)
Context (guide: 1~2 paragraphs)	The training was mainly undertaken in an office environment with some site visits to other organizations within the Standards and Conformance Infrastructure. The training undertaken included a series of presentations and to conclude most presentations there was a practical exercise or role play.
Lesson Learned (guide: 0.5 ~1.5 pages)	• Participants found that they learnt most from practical exercises than from the theoretical presentations given and requested more practical exercises be given • One person conducted most sessions and it would be useful to have a second person lead a few sessions. (It becomes very boring for the trainee when the same person is leading the sessions all the time, however it does provide consistency.) • Using examples from the trainers own experience was received well by participants. • Participants in the training learnt a great deal from experiencing 'Standardization in action' for example attending committee meetings and participating in planning exercises etc.
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	Australia
Org/Ministry	Standards Australia (and also Standards New Zealand)
Position	Manager, International Development
Name	Karen Hitchiner
Phone, Email	+64 4 498 5945, Karen.hitchiner@standards.org.au

E12. Hong Kong – HKSARG (Annex.B #46)

Lesson Title	Training/ education programs, conferences, workshops, seminars on standards and conformance organised by education institutions, trade, industrial and business organisations.
Date	
Context (guide: 1~2 paragraphs)	The training/ education programs, conferences, workshops, and seminars may be conducted on a need basis subject to market needs.
Lesson Learned (guide: 0.5 ~1.5 pages)	The HKSARG maintains a business-friendly environment which is conducive to the growth of all types of enterprises by maintaining a system of government policies and administrative procedures with minimum red tape, by minimising government intervention in the economy, and by providing an efficient infrastructure for business and other economic activities. While a comprehensive system of technical education and vocational training is provided through our tertiary education institutes, the Vocational Training Council and various other training institutes, we encourage trade, industrial and business organisations to organise training/ education programs, conferences, workshops and seminars relating to standards and conformance based on market needs. This ensures efficient allocation of resources and enables our businesses to respond effectively and efficiently to changing circumstances. Indeed, in both the public and private sectors, many training courses, mostly related to individual standards, are provided as needs arise.
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	HKC
Org/Ministry	PSIB, ITC
Position	
Name	
Phone, Email	psib@itc.gov.hk

E13. Singapore – SPRING (Annex.B #59)

Lesson Title	Actual case studies and Benefit of standards
Date	Not applicable
Context (guide: 1~2 paragraphs)	The lessons learnt were gathered from past experiences in organising seminars and feedback from the industry.
Lesson Learned (guide: 0.5 ~1.5 pages)	• Publicise the event through stakeholders as partners to obtain maximum participation. • Feature actual case studies of how companies have benefited from the use of standards. • Feature benefits in terms of monetary value, such as cost savings, revenue etc.
Source Reference	Not applicable.

**** Submitted by (please contact following person for further information):***

Economy	Singapore
Org/Ministry	SPRING Singapore
Position	Senior Manager
Name	Winston Wong
Phone, Email	+65 62791825, winston_wong@spring.gov.sg

E14. Chinese Taipei – NII (Annex.B #60)

Lesson Title	Operation
Date	09-2006
Context (guide: 1~2 paragraphs)	Why did industry, government and the general public show low interest in standard-related training/education?
Lesson Learned (guide: 0.5 ~1.5 pages)	1. Trainees didn't know the economic value and strategic comprehension of standards/standardization. 2. Top decision-level executives should catch and realize the economic value and strategic comprehension of standards/standardization so as to encourage or order medium-level/working-level businessmen to attend related training education. 3. Embed marketing (including policy marketing) and public relations shall be mapped out in large scale in advance to warm up the awareness and interest. 4. Concepts and knowledge of standards/standardization should be linked with real cases, news and events.
Source Reference	N/A

**** Submitted by (please contact following person for further information):***

Economy	Chinese Taipei
Org/Ministry	National Information Infrastructure Enterprise Promotion Association
Position	Deputy CEO
Name	Eho-Cheng Lo
Phone, Email	ecl31@nii.org.tw

E15. Chinese Taipei – ADT (Annex.B #61)

Lesson Title	Seminar on Low Power Radio Frequency Device Type Approval Procedures
Date	May 9, 2007
Context (guide: 1~2 paragraphs)	Advance Data Technology, LTD.（ADT） was recognized by the National Communications Commission (NCC) as the first private Certification Body in 2005. Enforcing Controlled Telecommunications Radio Frequency Device（Low Power Radio Frequency Equipment）type approval businesses, it has issued hundreds of NCC Low Power Radio Frequency Equipment type approval certificates. This effectively helped manufacturers and sellers fulfill the requirement of "on time to market".
Lesson Learned (guide: 0.5 ~1.5 pages)	To keep on providing relevant businessmen and the general public with information about regulations of Controlled Telecommunications Radio Frequency Devices, type approval methods and testing requirements of newly developed wireless communications products, ADT specially ran this seminar. Type approval range: low power radio frequency equipment operating in the frequency range 9kHz to 40GHz, such as: Wireless Local Area Network (WLAN) products (including IEEE 802.11a/b/g) , U-NII, Bluetooth products, wireless keyboards, wireless mice, wireless headsets, radio walkie-talkies, wireless remote-controlled toys, various types of radio remote controllers, various types of wireless burglary-resistant devices, etc. Targets of invitation: Consumer Protection Commission（Executive Yuan）, low power radio frequency equipment manufacturers, importers, distributors and retailers, relevant societies, large-scale quantity-buy shop, department stores, communications equipment stores, consumer groups and individuals, etc.
Source Reference	

**** Submitted by (please contact following person for further information):***

Economy	Chinese Taipei
Org/Ministry	Advance Data Technology, LTD.（ADT）
Position	
Name	
Phone, Email	service@adt.com.tw

E16. USA – UL University (Annex.B #101)

Lesson Title1	Implement a formalized process for designing course materials.
Date	2003
Context (guide: 1~2 paragraphs)	UL University customizes a lot of the workshops and training materials that it utilizes to meet the needs of the particular target audience and topic being addressed. After experimenting with the design of materials for various training sessions over the years, ULU decided to implement and enforce a formal process for designing workshop content, structure and related materials. Doing this has allowed ULU to streamline the process and also ensure that quality of ULU programs remains consistent. UL University's formalized course design process was certified ISO 9000 compliant in 2006.
Lesson Learned (guide: 0.5 ~1.5 pages)	UL University is proud that so many of its programs are tailored to meet the needs of the individuals involved. However, in order to increase the amount of training sessions and variety of formats used, and also speed the delivery of necessary course materials, ULU had to put in place formal procedures that may be carried out consistently in the development of courses and their materials. Each course can still be designed in a unique and authentic way; however, ULU completes the design work under a flexible framework that guides the process from start to finish. UL University also makes sure that all courses combine elements that accommodate the different styles and multiple-intelligences for the individuals targeted for an educational program: (visual learners, auditory learners, and kinesthetic learners). By utilizing the formalized process for course design, ULU ensures that courses contain elements of lecture (auditory), course materials (visual), on-line activities, small-group discussions, and hands-on activities.
Source Reference	UL University

Lesson Title2	Implement a formalized process for designing course materials.
Date	March, 2007
Context (guide: 1~2 paragraphs)	UL University has been developing an increasing number of courses for international audiences in recent years. UL's services, being so closely linked to the manufacturing sector, must always keep pace with international economic activity and the rising scale of trade worldwide. ULU was right to assume that foreign government officials, local authorities, manufacturers and other audiences would share an interest in standards and conformance issues in the same way that national audiences have for so many years. However, implementing programs for international audiences has its own set of unique challenges that must be addressed in order to ensure successful educational experiences. Cultural norms - including preferred

	methods of instruction – and sensitivities to certain formats and discussion topics MUST be taken into consideration in the design and implementation phases.
Lesson Learned (guide: 0.5 ~1.5 pages)	ULU has found through its experiences educating individuals overseas that transposing programs, content and teaching methods utilized in the United States in some international situations does not always yield the same positive results. Programs need to be tailored to the audiences involved, particularly with respect to cultural differences. For example, ULU instructors have noted a preference among some Asian audiences (government officials in particular) to work out issues and problems related to the course content and ideas expressed therein, in private settings – not in open forum situations where one person might risk contradicting another in front of the instructors. These audiences do appreciate small group discussion of course materials and question & answer sessions, but sessions designed for open-forum airing of ideas and issues that have not been vetted and resolved among the parties involved can result in extended periods of silence and inactivity. Course content designers and instructors must be sensitive to the level of knowledge and development of the individuals directly involved in the workshop, and also the cultural and economic context of the countries that the audiences represent. This is particularly important in situations where courses are offered to individuals from an array of different countries at once.
Source Reference	UL University

**** Submitted by (please contact following person for further information):***

Economy	USA
Org/Ministry	Underwriters Laboratories Inc
Position	Manager, International Affairs
Name	Ms. Erin Grossi
Phone, Email	Ph: 202-296-7841 Email: Erin.Grossi@us.ul.com

E17. APEC – SCSC PAGE recommendations (Annex.B #103)

Date	June 25~26, 2007 In the APEC SCSC Project Advisory Group on Education(PAGE) meeting in Cairns, Australia
Context (guide: 1~2 paragraphs)	The PAGE meeting was organized in line with APEC SCSC meeting in Cairns to exchange information and to discuss future directions for standards education. Around 40 representatives from APEC economies, and its Special Regional Bodies participated in the meeting Major recommendations or lessons learned during the meeting were described below from Lesson one to four.
Lesson 1	▷Category: General, Operation◁ **<u>Understand Different needs by Target Groups</u>**
	✓ We should understand that the interest and attitude are different from target groups ✓ Primary/Secondary School - University - Biz - Gov ✓ Accordingly, we should consider seriously the difference in planning and implementing education program ✓ Appropriate hours - level of details - objective ✓ Curriculum, Textbook, Teaching Methods
Lesson 2	▷Category: Textbook and Teaching Methods◁ **<u>Make Textbook interesting</u>** **<u>Make Teaching methods interesting</u>**
	✓ We should Make curriculum and textbook fun, sexy, attractive, interesting, useful ✓ Not teach what you know well (e.g. ISO process), but what the students could be interested/excited ✓ We should Consider Various interactive teaching methods as much as possible ✓ Strong needs for case studies and business cases ✓ Guest speakers, Field visit, panel discussion, case studies and presentations, Audio/Video, Game, FAQs are useful ✓ We should provide tips/guide with textbook to be easily used or implemented
Lesson 3	▷Category: Textbook and Teaching Methods◁ **<u>Utilize already existing resources</u>**
	✓ We should identify/utilize existing teaching materials developed by member economies, SRBs, and relevant international organizations ✓ i.e. ISO DEVCO manual (1987) ✓ We should consider setting up website database to share important data - teaching materials, presentations, web-links, information gathered from other organizations, good practices

Lesson 3	▷Category: Others: Teacher Training, Teachers' Networking◁ **Training of Teachers are important** **Networking of Teachers are important**
	✓ We understand that No standard exists what to teach; NOT easy to secure good teachers; NOT easy to define what to teach and to be tested; NOT easy to teach all areas of SC ✓ We should recognize the importance and necessity of training the teachers ✓ We should facilitate networking of teachers with website or forum to exchange teaching materials, viewpoints and test methods
Source Reference	Summary Report of the APEC SCSC PAGE 2nd Meeting

**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association (KSA)
Position	Senior Standards Analyst, the Project Editor
Name	Mr Donggeun CHOI
Phone, Email	+82-2-6009-4828, its2win@kisi.or.kr

E18. CEN – COPRAS (Annex.B #106)

Lesson Title	
Date	Over COPRAS project duration – February 2004-January 2007
Context (guide: 1~2 paragraphs)	We have been able to establish a large amount of information about research consortia's understanding of the nature and process of ICT standardization, as well as its relevance to them
Lesson Learned (guide: 0.5 ~1.5 pages)	The results were somewhat disturbing! See the COPRAS final evaluation report at http://www.w3.org/2004/copras/docu/D28R1.pdf, and in particular the conclusions at pages 23 and 24. In particular, it is clear that the level of understanding of the ICT standards environment, given its overall complexity and fragmentation, is very low. The generic guidance material we have provided needs further development, but a lot more educational work needs to be undertaken also.
Source Reference	

E19. ICES – 2nd Workshop Summary (Annex.B #108)

Lesson Title	▷Category: Textbook and Teaching Methods◁ **Make teaching materials(textbook) and methods FUN and SEXY**
Date	Feb 7~9, 2007 in the discussion of the 2nd ICES Meeting *ICES: International Committee for Education about Standardization
Context (guide: 1~2 paragraphs)	In many countries it turns out to be difficult to attract students under the theme of standardization. This problem may be related to the educational materials and teaching methods used in education courses for standardization.
Lesson Learned (guide: 0.5 ~1.5 pages)	The ICES 2007 Workshop participants expressed sympathy that the content itself and the presenting way of content be **FUN and SEXY** in any classes of education on standardization. It is clear that **'CASE STUDIES'** are one of the most useful and attractive tools to deal with standardization issues. A Good case study could be highlighted with various important aspects of standardization, such as economics, business management tool, patent, de jure vs. de facto, et al. One good example case discussed in the workshop was RAMBUS among others. In the case of teaching methods, you might pay attention to a) 'team-teaching method', particularly inviting speakers from businesses and b) mock meeting of standardization (simulation exercises). **TEAM TEACHING METHODS, particularly inviting business experts or executives as speaker**, make courses more energetic and cheerful. However, a possible disadvantage of invited speakers tends to lack of teaching experience. Also, a **SIMULATION EXCERCISE** is pointed out to be a cheerful mechanism. A memorable case is the program developed by ISO. ISO has developed an e-learning course which uses a teaching case, a simulation, for educating experts participating in ISO standards development process. The participants of this course takes play the role of national delegates of a imaginary country "Southistan" and simulates the standardization meeting. This kind of mock meeting of standardization, would also be useful for university students.
Source Reference	Summary as participant in the ICES 2007. Referred to the report about ICES 2007 Workshop written by workshop co-chairs Henk J. de Vries (Erasmus Univ) and Tineke M. Egyedi(TU Delft).Please visit the website for more information about ICES 2007 workshop. (http://www.tbm.tudelft.nl/webstaf/tinekee/ICES2007/index.html)

**** Submitted by (please contact following person for further information):***

Economy	Republic of Korea
Org/Ministry	Korean Standards Association (KSA)
Position	Senior Standards Analyst, the Project Editor
Name	Mr Donggeun CHOI
Phone, Email	+82-2-6009-4828, its2win@kisi.or.kr

Annex F

Contact Information
for Standards Education

<Annex F1>

Contact in General
for standards Education

Economy: Canada

Organization /Ministry	Name:	Standards Council of Canada
	Website:	www.scc.ca
Contact Person	Name:	Ms. Anne Sharkey
	Position/Title:	Information Resource Officer
	Division :	Intergovernmental Affairs and Trade
	Phone:	613-238-3222 Ext. 460
	Fax:	613-569-7808
	Email:	asharkey@scc.ca

Economy: Chile

Organization /Ministry	Name:	Ministry of Economy (Foreign Trade Department)
	Website:	www.reglamentostecnicos.cl
Contact Person	Name:	Ms Ana Maria Vallina
	Position/Title:	Head of Foreign Trade Department
	Division :	Foreign Trade Department
	Phone:	(56 2) 4733441
	Fax:	(56 2) 4733427
	Email:	amvallina@economia.cl
Contact Person	Name:	Ms Carolina Ramírez
	Position/Title:	Adviser of Foreign Trade Department
	Division :	Foreign Trade Department
	Phone:	(56 2) 4733443
	Fax:	(56 2) 4733427
	Email:	cramirez@economia.cl

Economy: Chinse Taipei(1_BSMI)

Organization /Ministry	Name:	National Information Infrastructure Enterprise Promotion Association
	Website:	www.nii.org.tw
Contact Person	Name:	Mr. Eho-Cheng Lo
	Position/Title:	Deputy CEO
	Division :	
	Phone:	+886 2 25082353 x106
	Fax:	+886 2 25073507
	Email:	ecl31@nii.org.tw

Economy: Chinese Taipei (2_NCC)

Organization /Ministry	Name:	National Communications Commission
	Website:	www.ncc.gov.tw
Contact Person	Name:	(Mr.) Sheng-Guang Chien
	Position/Title:	Section Chief
	Division :	Technologies Administration Department
	Phone:	+886-2-2343-3552
	Fax:	+886-2-2343-3699
	Email:	jmpd@ncc.gov.tw

Economy: Hong Kong

Organization /Ministry	Name:	Innovation and Technology Commission (ITC)
	Website:	http://www.itc.gov.hk/en/quality/psis/about.htm
Contact Person	Name:	
	Position/Title:	
	Division :	Product Standards Information Bureau (PSIB)
	Phone:	(852) 2829 4823
	Fax:	(852) 2824 1302
	Email:	psib@itc.gov.hk

Economy: Indonesia

Organization /Ministry	Name:	National Standardization Agency (BSN)
	Website:	www.bsn.or.id
Contact Person	Name:	Tisyo Haryono
	Position/Title:	Head of center
	Division :	Promotion and education of standardization
	Phone:	+62-21-5747043/44
	Fax:	+62-215747045
	Email:	tisyo@bsn.or.id

Economy: Japan

Organization /Ministry	Name:	Ministry of Economy, Trade and Industry (METI)
	Website:	http://www.meti.go.jp/english/index.html
Contact Person	Name:	Akiko KAWAI (Ms)
	Position/Title:	Sector Chief
	Division :	International Affairs Office for Standards and Conformance
	Phone:	+81-3-3501-9471
	Fax:	+81-3-3580-8637
	Email:	Kawai-akiko@meti.go.jp

Economy: Malaysia

Organization /Ministry	Name:	Department of Standards Malaysia
	Website:	www.standardsmalaysia.gov.my
Contact Person	Name:	Mr. Wan Azrin Izani Wan Mohd Zain/ Ms. Shahnaz Rakhmat
	Position/Title:	Assistant Director of Standards
	Division :	Standards Division
	Phone:	+603-8885 8822/8181
	Fax:	+603-8889 4200
	Email:	wazrin@standardsmalaysia.gov.my/ shahnaz@standardsmalaysia.gov.my

Economy: Philipines

Organization /Ministry	Name:	MR. JESUS L. MOTOOMULL
	Website:	www.bps.dti.gov.ph
Contact Person	Name:	MS. MARIE CAMILLE B. CASTILLO
	Position/Title:	Head
	Division :	Standards Promotions and Media Relations
	Phone:	632-751-4740
	Fax:	632-751-4748
	Email:	CamilleCastillo@dti.gov.ph

Economy: Korea

Organization /Ministry	Name:	Korean Standards Association
	Website:	www.ksa.or.kr
Contact Person - APEC, ASEM, Cooperation-	Name:	Mr. Donggeun CHOI
	Position/Title:	Senior Standards Analyst
	Division :	Standards R&D Team
	Phone:	82-2-6009-4828
	Fax:	82-2-6009-4819
	Email:	its2win@kisi.or.kr

Economy: Singapore

Organization /Ministry	Name:	SPRING Singapore
	Website:	http://www.standards.org.sg
Contact Person	Name:	Mr Winston Wong
	Position/Title:	Senior Manager (Marketing and Sales)
	Division :	Standardisation
	Phone:	+65 62791825
	Fax:	+65 62786990
	Email:	Winston_wong@spring.gov.sg

Economy: Thailand

Organization /Ministry	Name:	Thai Industrial Standards Institute (TISI) / Ministry of Industry
	Website:	www.tisi.go.th
Contact Person	Name:	Ms. Chaowalee Ratanamomgmeka
	Position/Title:	Director
	Division :	Standards Promotion and Development
	Phone:	(66 2) 202 3427
	Fax:	(66 2) 354 3315
	Email:	chaowlee@tisi.go.th

Economy : USA (1_ANSI)

Organization /Ministry	Name:	American National Standards Institute
	Website:	www.ansi.org
Contact Person	Name:	Mr. Stacy Leistner
	Position/Title:	Director, Communications and Public Relations
	Division :	Communications
	Phone:	+1-212-642-4931
	Fax:	+1-212-840-2298
	Email:	sleistne@ansi.org

Economy: Vietnam

Organization /Ministry	Name:	Directorate for Standards and Quality (STAMEQ)/MOST
	Website:	www.tcvn.gov.vn
Contact Person	Name:	Mr. Phan Minh Hai
	Position/Title:	Director
	Division :	Training Centre
	Phone:	84-4-8361407/8361408/7564246
	Fax:	84-4-8361408
	Email:	Training1.stq@fpt.vn
Organization /Ministry	Name:	Directorate for Standards and Quality (STAMEQ)/MOST
	Website:	www.tcvn.gov.vn
Contact Person	Name:	Mr. Tran Van Hoc
	Position/Title:	Director
	Division :	Standards Department
	Phone:	84-4-7911 629
	Fax:	84-4 7911 595
	Email:	bantieuchuan@tcvn.gov.vn

Non-APEC

Economy: Sri Lanka

Organization /Ministry	Name:	Sri Lanka Standards Institution
	Website:	www.slsi.lk
Contact Person	Name:	(Mr/Ms)Ms. P. Talgaswatte
	Position/Title:	Director (Training)
	Division :	Training
	Phone:	+94112685546
	Fax:	-
	Email:	priyadarshani@slsi.slt.lk

<Annex F2>

Contact of Education Committee for standards Education

- Chair and Secretariat -

Canada

Committee	Name:	CSA Committee on Standards and Education
	Authorized by:	
	Website:	http://www.csa.ca/Default.asp?language=english
Secretariat	Name:	Gregory Skinner
	Affiliation:	CSA
	Position:	Business Assessment Manager
	Phone:	416-747-4099
	Fax:	
	Email:	gregory.skinner@csa.ca

Economy: Taipei(1_BSMI)

Committee	Name:	1st Division (Standards), Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs
	Authorized by:	Ministry of Economic Affairs
	Website:	www.standards.org.tw
Chair	Name:	Chue-Wen Wu
	Affiliation:	
	Position:	
	Phone:	+886 2 33435102
	Fax:	+886 2 33435126
	Email:	Chuewen.wu@bsmi.gov.tw
Secretariat	Name:	Eho-Cheng Lo
	Affiliation:	
	Position:	Deputy CEO
	Phone:	+886 2 25082353 x106
	Fax:	+886 2 25073507
	Email:	ecl31@nii.org.tw

Economy: Japan

Committee	Name:	Japanese Standards Association (JSA)
	Authorized by:	
	Website:	http://www.jsa.or.jp
Secretariat	Name:	Takashi Matsumoto (Mr)
	Affiliation:	International Cooperation on Standards and Quality
	Position:	Senior Researcher
	Phone:	+81-3-5770-1596
	Fax:	+81-3-5770-1592
	Email:	matsumoto@jsa.or.jp

Economy: Malaysia

Committee	Name:	Malaysian Association of Standard Users
	Authorized by:	Department of Standards Malaysia
	Website:	www.standardusers.org
Chair	Name:	Datuk Marimuthu Nadason
	Affiliation:	-
	Position:	President
	Phone:	+603-7874 1622
	Fax:	+603-7877 1076
	Email:	-
Secretariat	Name:	Ms. Ratna Devi Nadarajan
	Affiliation:	-
	Position:	Director
	Phone:	+603-7874 1622
	Fax:	+603-7877 1076
	Email:	ratna@standardusers.org

Economy: Korea

Committee	Name:	KSA-University Standardization Education Committee
	Authorized by:	KSA
	Website:	www.ksa.or.kr
Chair	Name:	Mr. Gyehyung LEE
	Affiliation:	Korean Standards Association
	Position:	Chairman and CEO
	Phone:	+82-2-6009-4500
	Fax:	+82-2-6009-4509
	Email:	
Secretariat	Name:	Ms. Danbee KIM
	Affiliation:	Korean Standards Association
	Position:	Researcher
	Phone:	+82-2-6009-4845
	Fax:	+82-2-6009-4849
	Email:	danbee@ksa.or.kr

Economy: USA (1_ANSI)

Committee	Name:	ANSI Committee on Education
	Authorized by:	American National Standards Institute
	Website:	www.ansi.org/education
Chair	Name:	Dr. Richard J. Forselius,
	Affiliation:	Hamilton Sundstrand Corp., a United Technologies Co
	Position:	Manager, Records & Standards Engineering & Technology Adjunct Instructor MBA, MS Management and BS Management Programs New Dimensions Program Albertus Magnus College

	Phone:	(860) 654-5486
	Fax:	(860) 660-3365
	Email:	rj.forselius@hs.utc.com
Secretariat	Name:	Lisa Rajchel
	Affiliation:	ANSI
	Position:	Director, Standards Facilitation
	Phone:	(212) 642-4932
	Fax:	(212) 840-2298
	Email:	lrajchel@ansi.org

Economy: Vietnam

Committee	Name:	SMQ Training Centre
	Authorized by:	STAMEQ
	Website:	www.tcvn.gov.vn (STAMEQ's Web site)
Chair	Name:	Mr. Phan Minh Hai
	Affiliation:	
	Position:	Director
	Phone:	84-4-8361407/8361408/7564246
	Fax:	84-4-8361408
	Email:	Training1.stq@fpt.vn

a) On Standards- and quality-related issues:

Committee	Name:	Vietnam Standards and Quality Centre (VSQC)
	Authorized by:	STAMEQ
	Website:	www.vsqc.org.vn
Chair	Name:	Mr. Vu Van Dien
	Affiliation:	
	Position:	Director
	Phone:	84-4 7562807
	Fax:	84-4 8361771
	Email:	info@vsqc.org.vn

b) On Productivity- and quality-related issues:

Committee	Name:	Vietnam Productivity Centre (VPC)
	Authorized by:	STAMEQ
	Website:	www.vpc.vn
Chair	Name:	Mr. Nguyen Anh Tuan
	Affiliation:	
	Position:	Director
	Phone:	84 -4 7561501
	Fax:	84-4 7561502
	Email:	vpc@vpc.org.vn vpc@fpt.vn

<Annex F3>

Contact of Contributors
in writing Education Experience Fact Sheets
of Project Survey Questionnaire

Economy	Australia (and New Zealand)
Org/Ministry	Standards Australia (and Standards New Zealand)
Position	Manager, International Development
Name	Karen Hitchiner
Phone, Email	+64 4 498 5945; Karen.hitchiner@standards.org.au

Economy	Australia
Org/Ministry	Standards Australia
Position	International Team Manager
Name	Max Maffucci
Phone, Email	+61 2 8206 6710; max.maffucci@standards.org.au

Economy	Brunei Darussalam
Org/Ministry	CPRU - Ministry of Development
Position	Executive Engineer
Name	Rosalind Khan
Phone, Email	+673-2381724 /modcpru@brunet.bn

Economy	Canadian
Org/Ministry	Standards Council of Canada
Position	Coordinator Member Program
Name	Nicole Bosiak
Phone, Email	613-238-3222 Ext.468 nbosiak@scc.ca

Economy	Chinese Taipei
Org/Ministry	National Information Infrastructure Enterprise Promotion Association
Position	Deputy CEO
Name	Eho-Cheng Lo
Phone, Email	ecl31@nii.org.tw

Economy	Chinese Taipei
Org/Ministry	Taiwan Accreditation Foundation（TAF）
Position	
Name	Ms. Miaw Chyng Chen
Phone, Email	+886-2-2391-4626 extension 29，training@tafw.org.tw

Economy	HKC
Org/Ministry	PSIB, ITC
Position	/
Name	/
Phone, Email	psib@itc.gov.hk

Economy	Japan
Org/Ministry	Japanese Standards Association (JSA)
Position	Senior Researcher
Name	Takashi Matsumoto (Mr)
Phone, Email	+81-3-5770-1596, matsumoto@jsa.or.jp

Economy	Japan
Org/Ministry	Ministry of Economy, Trade and Industry
Position	Sector Chief
Name	Akiko Kawai
Phone, Email	+81-3-3501-9471, kawai-akiko@meti.go.jp

Economy	Malaysia
Org/Ministry	Department of Standards Malaysia
Position	Assistant Director of Standards
Name	Wan Azrin Izani bin Wan Mohd Zain/ Shahnaz Rakhmat
Phone, Email	+603-8885 8822/ 8181, wazrin@standardsmalaysia.gov.my/ shahnaz@standardsmalaysia.gov.my

Economy	P.R.China
Org/Ministry	Standardization Administration of China
Position	Deputy Director
Name	LI Dongfang, Du Chunjing
Phone, Email	lidf@sac.gov.cn，dchj@cnca.gov.cn

Economy	Philippines
Org/Ministry	Department of Trade and Industry – Bureau of Product Standards
Position	Head, Standards Promotions and Media Relations
Name	Ms. Marie Camille B. Castillo
Phone, Email	(632) 751-4740; CamilleCastillo@dti.gov.ph

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Researcher
Name	Danbee KIM
Phone, Email	82-2-6009-4845, emailkim@ksa.or.kr

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Researcher
Name	Mr Channy Lee
Phone, Email	+82-2-16-317-3579, channy@ksa.or.kr

Economy	Republic of Korea
Org/Ministry	TTA (Telecommunications Technology Association)
Position	Deputy General Manger
Name	Mr. Sungpil YU
Phone, Email	82-31-724-0113, spyu@tta.or.kr

Economy	Singapore
Org/Ministry	SPRING Singapore
Position	Senior Manager
Name	Winston Wong
Phone, Email	+65 62791825, winston_wong@spring.gov.sg

Economy	Thailand
Org/Ministry	Standardization Promotion and Development Division Thai Industrial Standards Institute (TISI) Ministry of Industry
Position	Director
Name	Ms. Chaowalee Ratanamungmeka
Phone, Email	(66 2) 202 3427 chaowlee@tisi.go.th

Economy	United States of America
Org/Ministry	American Association for Laboratory Accreditation
Position	Training Coordinator
Name	Julie Stevens
Phone, Email	(301) 644 3235, jstevens@a2la.org

Economy	United States of America
Org/Ministry	Underwriters Laboratories Inc. /UL University
Position	Manager, International Affairs
Name	Erin Grossi
Phone, Email	202-296-7841 Erin.Grossi@us.ul.com

Economy	United States of America
Org/Ministry	Faulkner University
Position	Professor of Informatics
Name	Brenda G. Turner, Ph.D.
Phone, Email	334-386-7575; bturner@faulkner.edu

Economy	United States of America
Org/Ministry	ANSI
Position	
Name	John Toth
Phone, Email	1-720-226-9108 john.toth@ip-shield.com

Economy	United States of America
Org/Ministry	Catholic University of America
Position	Faculty
Name	Don. Purcell
Phone, Email	+1 202/314-5232, donpurcell@strategicstandards.com

Economy	Vietnam
Org/Ministry	STAMEQ
Position	Deputy Director of SMQ Training Centre
Name	Luong Viet Cuong (Mr.)
Phone, Email	Phone: 84-4 8361 407/7564 246; E-mail: cuongld@fpt.vn

Non-APEC

Economy	Egypt – Summarized from ISO Focus 2007 November
Org/Ministry	The Arab Academy for Science, Technology and Maritime Transport
Position	Dr.
Name	Sherif Al-Araby
Phone, Email	Tel: + 203-574-4032, E-mail: sh_araby@aast.edu

Economy	France
Org/Ministry	Company : ZFIB Conseil EURL
Position	Manager
Name	Miss Bousquet Françoise
Phone, Email	+ 33 1 43 48 43 69 francoise.bousquet@zfib.com

Economy	Sri Lanka
Org/Ministry	University of Moratuwa
Position	Professor
Name	Niranjan D. Gunawardena
Phone, Email	+94112650301; ndg@civil.mrt.ac.lk

Economy	The Netherlands
Org/Ministry	RSM Erasmus University
Position	Associate Professor Standardization
Name	Henk de Vries
Phone, Email	+31 10 408 20 02 / hvries@rsm.nl

Economy	---
Org/Ministry	CEN (European Standards Committee)
Position	Director, Pre-Standards
Name	John Ketchell
Phone, Email	+32 2 550 0846, john.ketchell@cen.eu

<Annex F3>

Contact of Contributors in writing Lessons Learned of Project Survey Questionnaire

Economy	Australia
Org/Ministry	Standards Australia (and also Standards New Zealand)
Position	Manager, International Development
Name	Karen Hitchiner
Phone, Email	+64 4 498 5945, Karen.hitchiner@standards.org.au

Economy	Australia
Org/Ministry	Standards Australia
Position	International Team Manager
Name	Max Maffucci
Phone, Email	+61 2 8206 6710, max.maffucci@standards.org.au

Economy	Chinese Taipei
Org/Ministry	National Information Infrastructure Enterprise Promotion Association
Position	Deputy CEO
Name	Eho-Cheng Lo
Phone, Email	ecl31@nii.org.tw

Economy	Chinese Taipei
Org/Ministry	Advance Data Technology, LTD.（ADT）
Position	
Name	
Phone, Email	service@adt.com.tw

Economy	HKC
Org/Ministry	PSIB, ITC
Position	
Name	
Phone, Email	psib@itc.gov.hk

Economy	Japan
Org/Ministry	Ministry of Economy, Trade and Industry
Position	Sector Chief
Name	Akiko Kawai
Phone, Email	+81-3-3501-9471, kawai-akiko@meti.go.jp

Economy	Malaysia
Org/Ministry	Department of Standards Malaysia
Position	Assistant Director of Standards
Name	Wan Azrin Izani bin Wan Mohd Zain/ Shahnaz Rakhmat
Phone, Email	+603-8885 8822/ 8181, wazrin@standardsmalaysia.gov.my/ shahnaz@standardsmalaysia.gov.my

Economy	Philippines
Org/Ministry	Bureau of Product Standards – Department of Trade and Industry
Position	Head, Standards Promotions and Media Relations
Name	Ms. Marie Camille B. Castillo
Phone, Email	(632) 751-4740; CamilleCastillo@dti.gov.ph

Economy	Republic of Korea
Org/Ministry	Korean Standards Association
Position	Researcher
Name	Danbee KIM
Phone, Email	82-2-6009-4845, emailkim@ksa.or.kr

Economy	Republic of Korea
Org/Ministry	Korean Standards Association (KSA)
Position	Senior Standards Analyst
Name	Mr Donggeun CHOI
Phone, Email	+82-2-6009-4828, its2win@kisi.or.kr

Economy	Singapore
Org/Ministry	SPRING Singapore
Position	Senior Manager
Name	Winston Wong
Phone, Email	+65 62791825, winston_wong@spring.gov.sg

Economy	Thailand
Org/Ministry	Thai Industrial Standards Institute (TISI) Ministry of Industry
Position	Director, Standardization Promotion and Development Division
Name	Ms. Chaowalee Ratanamungmeka
Phone, Email	(66 2) 202 3427, chaowlee@tisi.go.th

Economy	United States of America
Org/Ministry	Faulkner University
Position	Professor of Informatics
Name	Brenda G. Turner, Ph.D.
Phone, Email	334-386-7575; bturner@faulkner.edu

Non-APEC

Economy	France
Org/Ministry	Company : ZFIB Conseil EURL
Position	Manager
Name	Miss Bousquet Françoise
Phone, Email	+ 33 1 43 48 43 69 francoise.bousquet@zfib.com

Economy	Sri Lanka
Org/Ministry	University of Moratuwa, Sri Lanka
Position	Professor
Name	Niranjan D. Gunawardena
Phone, Email	+94112650301; ndg@civil.mrt.ac.lk

Economy	Netherlands
Org/Ministry	RSM Erasmus University
Position	Associate Professor Standardization
Name	Henk de Vries
Phone, Email	+31 10 408 20 02 / hvries@rsm.nl