Inspiring Next Generation of Standards Professionals Development:
Phase 2. Developing Career Path & Career Map
- Progress Report for 2017 SCSC2

*Approved in May 2017 (APEC/CTI SCSC 02 2017Self-Funded)

* Career Path refers to the various positions an employee moves to as he/she grows in an organization. An employee may move vertically (career ladder) most of the time but also move laterally or cross functionally(career lattice) to move to a different type of job role
* Career Map is a visual, codified approach to career management. It is a masterful roadmap to excellence in a confused and radically changing workforce.

23-24 AUGUST 2017
2018 SCSC 2 PLENARY
HO CHI MINH, VIET NAM

PREPARED BY REPUBLIC OF KOREA
DONGGEUN CHOI, KSA

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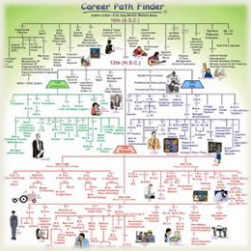
I. Project Overview

Project Overview

Proposing economy	• Republic of Korea
Co-sponsors	• China, Indonesia, Japan, Malaysia, Peru, Philippines, Thailand, USA, Viet Nam (9 economies)
Project Session	• Approved in May 2017
Period	• July 2017 ~ Nov 2018 (1.5 year)
Funding status	• Korea Self-funding

** What is a Career Roadmap?

Desire Dream Vision Planning Training Mindset Coaching Certification Job-Transfer



* Career Map is a visual, codified approach to career management; a roadmap to excellence in a radically changing workforce.
* Career Path refers to various positions an employee moves vertically or laterally as he/she grows in an organization.
(Detroit: career ladder vs. career lattice)

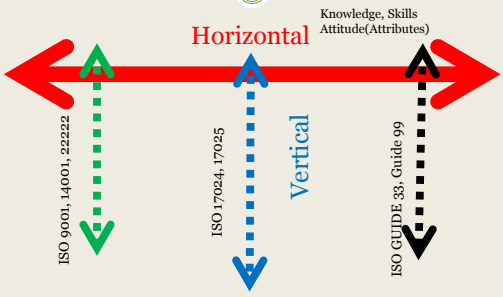
Project Objectives

- This project will collect best practices of leading professionals, and develop career roadmap and vision
  - to meet the needs of businesses, government agencies, education institutes, and standards-related organization in the APEC region.

The objectives of this project are the following:

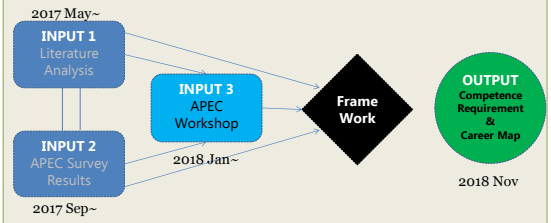
1. To collect and discuss best practices of leading professionals in member economies
2. To develop career path & roadmap for standardization professionals
   1. Also considering the attributes of conformity assessment and metrology
3. To prepare actionable recommendations for APEC SCSC and CTI

Project Scope
- Mainly on Horizontal Requirements –
- Linkage with Vertical Requirements -



Project Methodology

- Now under Input 1 (Analyzing previous efforts)



Methodology with timeline

(Input 1) Analyzing Previous Efforts and Literature
- Korean project team in cooperation with Co-sponsoring economies

(Input 2) Written Survey in 2017
- Written survey will be done in Oct - Dec, and the summary inputs will be ready by Jan 2018
- Type1. Economy level: Any Previous/Existing Efforts, Priority
- Type2. Individual level: Personal Career Map, Suggestions

(Input 3) Best Practice Workshop in Jan-Feb 2018
- A Best Practices Workshop to develop will be organized in Singapore in Jan-Feb 2018 in cooperation with IEC and ISO regional offices.

(Output) March-Oct 2018
- Present a draft report in 2018 SCSC1 meeting and circulate it for comments by SCSC Members for 6-8 weeks, and final report will be ready Oct 2018.

II. Setting a Framework

(Framework) Setting a Framework
- Structure of C-Requirements & Career-Map

- ILO (International Labor Organization)
  - International Standard Classification of Occupations (ISCO)
- Economy Level
  - Australia (National Competency Standards)
  - Korea (National Competence Standards)
  - USA (Standard Occupational Classification - https://www.bls.gov/soc/)
- ISO, IEC, and related documents
  - **ISO 22222:2005** (ISO TC222)
    - Personal financial planning -- Requirements for personal financial planners
  - **ISO 6781-3:2015** (ISO TC188/SC1)
    - Performance of buildings -- Detection of heat, air and moisture irregularities in buildings by infrared methods -- Part 3: Qualifications of equipment operators, data analysts and report writers
  - **ISO 18490:2015** (ISO TC135/SC7)
    - Non-destructive testing -- Evaluation of vision acuity of NDT personnel
  - **ISO/TS 17969:2015**
    - Petroleum, petrochemical and natural gas industries -- Guidelines on competency for personnel
  - **ISO/TR 21102:2013**
    - Adventure tourism -- Leaders -- Personnel competence
  - **ISO/IEC TS 17027:2014**
    - Conformity assessment -- Vocabulary related to competence of persons used for certification of persons
  - CEN Guide 14 (2010)
    - Common policy guidance for addressing standardisation on qualification of professions and personnel

(Framework) Setting a Framework
- Structure of C-Requirements & Career-Map

- ISO/IEC JTC1
  - ISO/IEC TR 24763:2011
    Information technology - Learning, education and training - Conceptual Reference Model for Competency Information and Related Objects
-

(Framework)
Terminology- Definition 1

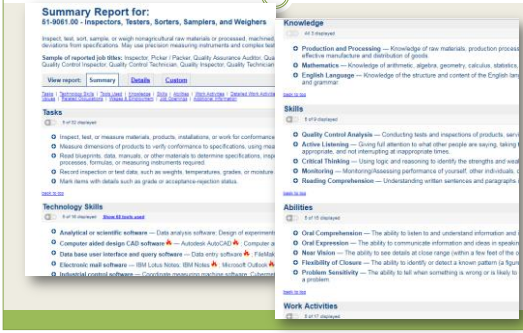
- **Competency**
  - ability to perform the activities within an occupation or function to the standard expected in the task
    - [ISO 15513:2000, definition 3.5]
- **Competence**
  - application of knowledge, skills, and behaviors in performance
    - [ISO 10015:1999, definition 3.1]
  - demonstrated ability to apply knowledge and/or skills and, where relevant, demonstrated personal attributes, as defined in the certification scheme
    - [ISO 9000:2005, definition 3.1.6]
- **competency standard**
  - standard which reflects the specification of knowledge and skill, and the application of that knowledge and skill to the standard of performance required in the task
    - [ISO 15513:2000, definition 3.5]
- **Qualification**
  - demonstration of physical attributes, knowledge, skill, training and experience required
    - [ISO 9712:2005, definition 3.23; ISO 20807:2004, definition 3.21]
  - process of demonstrating whether an entity is capable of fulfilling specified requirements
    - [ISO/IEC 12207:2008, definition 4.31]

(Framework)
Terminology- Definition 2

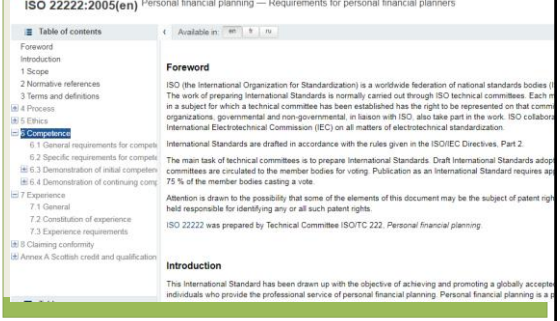
- **(broad general) Knowledge**
  - awareness and basic understanding over the breadth of the subject, but not to the depth that would be expected of a specialist in the specific subject area
    - [ISO 22222:2005, definition 3.1]
- **Skill**
  - the ability to apply knowledge and use know-how to complete tasks and solve problems
    - [EQF1), Annex I]
- **Experience**
  - knowledge and skills acquired while participating in the application of the personal financial planning process and related activities
    - [ISO 22222:2005, definition 3.10]
- **Assessment**
  - process of judging competency against prescribed standards of performance
    - [ISO 15513:2000, definition 3.3]

(Framework- Ex.) ILO- ISCO Structure
→ Tasks & Jobs

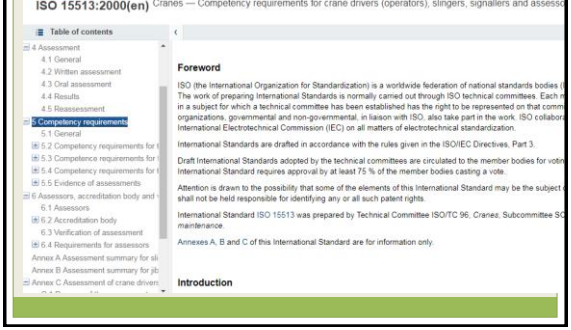
(Framework-Ex.) US-DOL Structure
→ Tasks, Technology Skills, Knowledge, Skills, Abilities, Work Activities, Job, Education



(Framework-Ex.) ISO 22222
- Job Process, Competence, Experience -



(Framework-Ex.) ISO 15513
- Job Process, Competence, Experience -



(Framework-Ex.) CEN Guide 14
→ Job Description, Tasks, Responsibilities, Competences, Tasks, Assessment, Education/Training

Element				Relevance of the element vs. methodological approach		
				approach focussing on competence	approach focussing on tasks	approach focussing on assessment
0.1 Introduction [a]				recommended	recommended	recommended
0.2 Foreword [b]				to be included	to be included	to be included
1 Scope [c]				to be included	to be included	to be included
2 Normative Reference [c]				possibly to be included	possibly to be included	possibly to be included
3 Terms and definitions [d]				recommended	recommended	recommended
n.0 Principle [e]				to be included	to be included	to be included
n.1 Description of job, service or process (by tasks)	n.1.1 General (Objectives, principles, ...)			recommended	to be included	recommended
	n.1.2 Process	n.1.2.1 General		possibly relevant	to be included	possibly relevant
		n.1.2.2 Description of process flow		possibly relevant	recommended	possibly relevant
		n.1.2.3 Phases of the process		possibly relevant	recommended	possibly relevant
	n.1.3 Tasks to be performed	n.1.3.1 General		possibly relevant	to be included	possibly relevant
		n.1.3.2 Detailed list of tasks		possibly relevant	recommended	possibly relevant
	n.1.4 Responsibilities associated to tasks or elements to be			possibly relevant	possibly relevant	possibly relevant

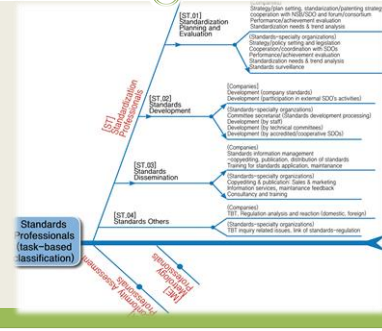
III. Input 1 –Review on Previous Efforts

(Input1) Analyzing Previous Efforts/Literature - Existing Efforts -

- APEC - SCSC(2015)
  - Phase 1 Project Results
- Korea - KSA(2013~2017)
  - Developed personnel competency requirements and qualification programs with two levels
- China – CNIS (2011~2017)
  - Knowledge System of Standard Science (2017) https://goo.gl/i1BmWR
  - Also, it was reported that a few Chinese local authorities and universities started qualification approach to personnel competence.
- Japan – KIT(2013):
  - Skill standard – Evaluation for skills of human resource required for standardization https://goo.gl/P6ZaPD
- USA - SES (2005~2017)
  - Personnel competence requirements and qualification program at two levels
  - https://goo.gl/v027iF
- Various Conferences and Journals
  - ICES Conferences in 2013, 2015, 2017

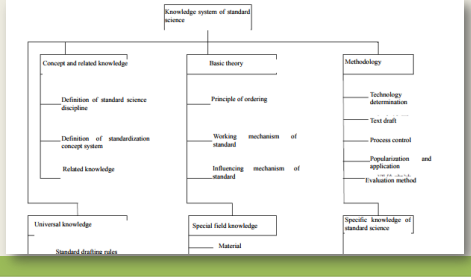
(Input1-Ex) APEC Project Phase 1
– Inspiring the Next Generation of Standards Professionals: Towards Job Profiling in Todays Global World -

- APEC (2015) , Choi, Donggeun

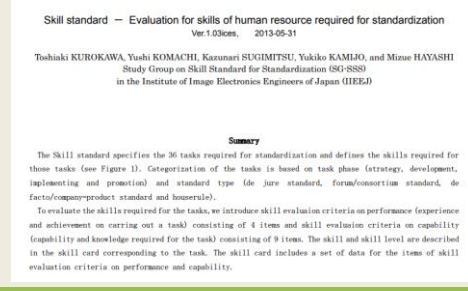


(Input1-Ex) Preliminary Exploration to Knowledge System of Standard Science

- Xuejing Wu1,a, Hongli Liang
- 2017 International Conference on Innovations in Economic Management and Social Science (IEMSS 2017)



(Input1-Ex) Skill standard – Evaluation for skills of human resource required for standardization



Skill standard – Evaluation for skills of human resource required for standardization
Ver.1.03ices, 2013-05-31

Toshiaki KUROKAWA, Yushi KOMACHI, Kazunari SUGIMITSU, Yukiko KAMIJO, and Mizue HAYASHI
Study Group on Skill Standard for Standardization (SG-SSS)
in the Institute of Image Electronics Engineers of Japan (IIEEJ)

Summary

The Skill standard specifies the 36 tasks required for standardization and defines the skills required for those tasks (see Figure 1). Categorization of the tasks is based on task phase (strategy, development, implementing and promotion) and standard type (de jure standard, forum/consortium standard, de facto/company-product standard and houserule).

To evaluate the skills required for the tasks, we introduce skill evaluation criteria on performance (experience and achievement on carrying out a task) consisting of 4 items and skill evaluation criteria on capability (capability and knowledge required for the task) consisting of 9 items. The skill and skill level are described in the skill card corresponding to the task. The skill card includes a set of data for the items of skill evaluation criteria on performance and capability.

(Input1-Ex) K.S.A for Standards Professional Qualification Programs

- Choi, Donggeun (May 2017, ANSI/SES Webinar)

2nd Level : Entry level

- 9 Knowledge Categories: 162 questions (out of 10 map categories) (122 multiple choice + 27 short answer + 13 descriptions)
- 1300 questions (university program: 1000+200+100)

1st Level : Expert level

- 19 Knowledge Categories: 478 questions (out of 31 map categories) (372 m.c. + 52 s.a + 54 d.)

All questions include three levels of difficulty - high-medium-low

(Input1-Ex) What does industry expect from standards education?

- Laurent Oberlé - 2013 ICES Conference and Meeting

(Input1-Ex) Industry needs for standards engineers Results from a global inventory

- Carla Freericks - 2013 ICES Conference and Meeting

Soft Skills

N°	Title	Courses at the Universities
1.a	Team-based, collaborative, team-player, positive approach, ...	Team-based
1.b	Able to work internally and in alliance with industry leaders/ coalitions /external groups	Team-based (Internally/externally)
1.c	Work within cross-functional and cross-divisional teams; multi-cultural teams	Team-based (cross functional/divisional)
2.a	Ability to resolve problems in a timely manner with little or no supervision	No/Little supervision
3.a	Excellent/good/Strong verbal & written communication skills	Communication Skills
3.b	Excellent/good/Strong presentation/lecture skills	Communication Skills
3.c	Comfortable to debate in an open forum /at Standard bodies	Communication Skills - Open forum
3.d	Ability to generate clear and organize technical submissions for standards bodies	Communication Skills -write Technical Standards
3.e	Represent on Board of Directors	Communication Skills -Represent Board of Directors
4.a	Strong interpersonal skills required	Interpersonal Skills
4.b	Diplomatic skills	Interpersonal Skills
5.a	Self-motivated with high degree of initiative; Self-motivated performance; proactive; self-starter, ...	Self-motivated
6.a	Must possess good analytical skills	Analytical Skills
7.a	Negotiation Skills	Negotiation Skills
8.a	Problem Solver Skills, Troubleshooting	Problem-solver Skills
9.a	Capability to understand a wide variety of technical concepts, quick learner	Understanding Capability
9.b	Detail oriented	Understanding Capability

(Input2) Written Survey - Collecting Best Practice -

- Type 1 (
  - Member Economies and domestic organizations/universities
    - Ex) China, Japan, Korea, USA
  - SRBs, IEC, ISO
- Type 2
  - Global standards leaders preferably in companies
    - More than 20 years of experience in domestic, international standards development and applications
  - Asking their career development experiences every 5 year basis (

(Input3) Best Practice Workshop - Two Day Program -

1st Day: Developing Competency Requirement

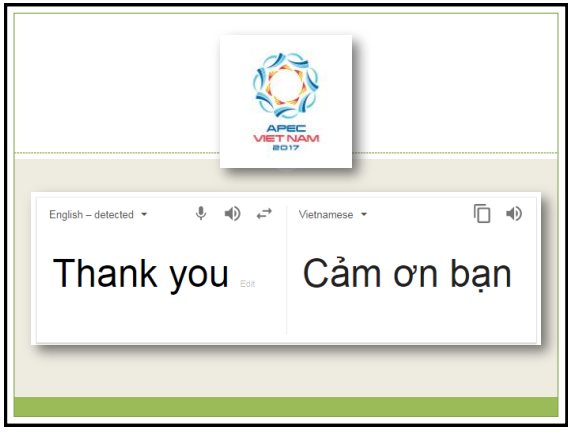
- Welcome & Keynote 1
- Project Overview
- Results of Survey 1
- IEC, ISO Presentations
- Economy Presentations
- Breakout Group Session
- Day 1 Wrap-Up

2nd Day: Designing Career Path Roadmap

- Keynote 2
- Project Overview
- Results of Survey 2
- IEC, ISO Presentations
- Leader Presentations
- Breakout Group Session
- Day 2 Wrap-Up

(Input3) Best Practice Workshop - Invitation, Dates/Venue -

- Korea, IEC & ISO cordially invites
  - SCSC Members and their nominees; SRB Representatives
  - IEC and ISO Members and their nominees
- Venue: Singapore
  - Deluxe hotel in Singapore. The Venue will be set in cooperation with IEC & ISO Regional Offices in Singapore
- Dates : Tentatively 22(Mon)-23(Tue) January 2018
  - In case the 2018 SCSC 1 dates are 25-26 January 2018
  - Subject to change depending on final dates of SCSC1. Roughly estimated based on previous schedules of SOM1/SCSC1 dates considering (Lunar Calendar) New Years Holidays (15-21 Feb 2018)
  - Direct flight from SGP→PPN(Port Moresby), 5 times a week, on Mon, Tue, Wed, Thu, Sun (8:15pm → 4:50am+1)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2017
English – detected
Vietnamese
Thank you
Edit
Cảm ơn bạn