

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 SCSC02 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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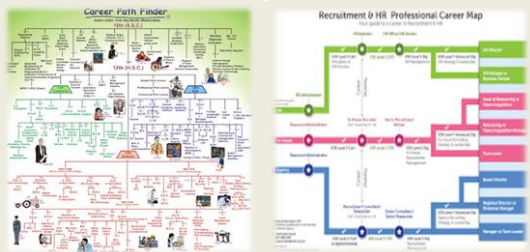
I. Project Overview

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?

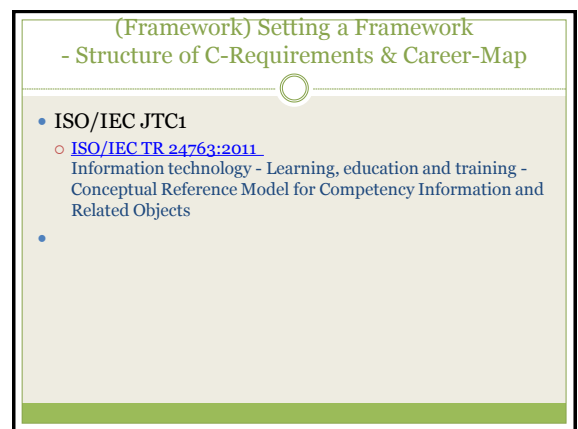
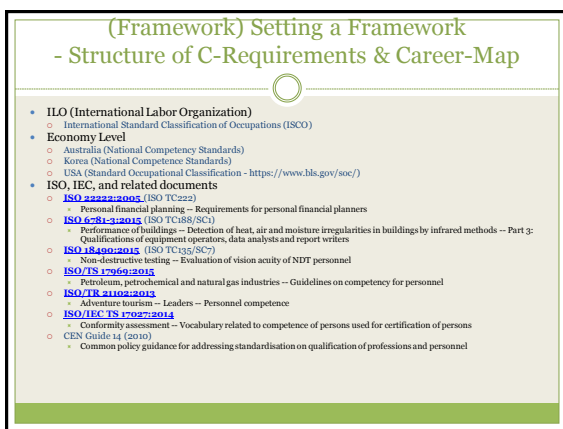
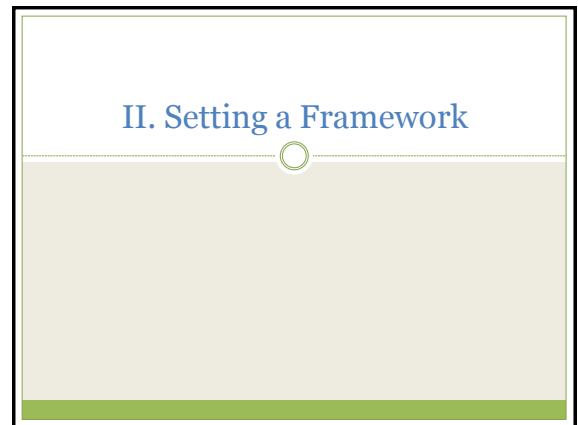
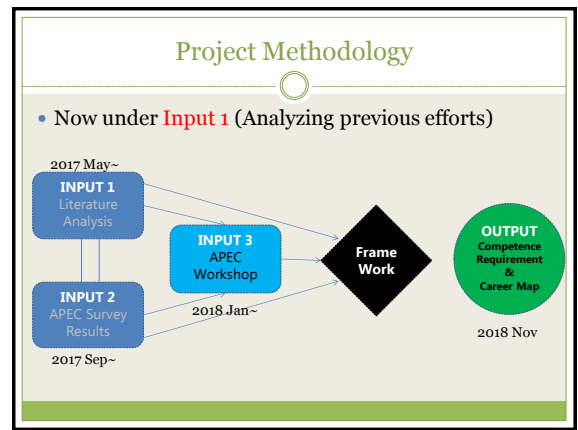
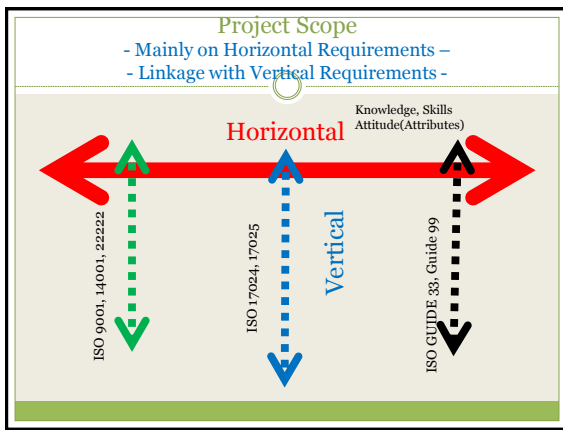
Desire Dream Vision Planning Training Skills Coaching Certification Job-Transfer



* **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



(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
 - [BQFI], 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

3332 SAFETY, HEALTH AND QUALITY INSPECTORS

Tasks include:

- (a) advising employers and workers' representatives on the implementation of government and other rules and regulations concerning occupational safety and the working environment;
- (b) inspecting plants of work to ensure that the working environment, machinery and equipment conforms to government and other rules, regulations and standards;
- (c) inspecting places of work and, by interviews, observations and other means, obtaining facts about work practices and accidents to determine compliance with safety rules and regulations;
- (d) inspecting places of production, processing, transport, handling, storage and sale of products to ensure conformity with government and other rules, regulations and standards;
- (e) inspecting finished products or parts for conformity with manufacturers' specifications and standards;
- (f) advising employers and the general public on the implementation of government and other rules and regulations concerning hygiene, sanitation, purity and grading of primary products, food, drugs, cosmetics and similar goods.

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

Summary Report for: 81-801.00 - Inspectors, Testers, Sorters, Samplers, and Weighers

Tasks

- Inspect, test, sort, sample, or weigh non-agricultural raw materials or processed, machined, fabricated, or finished products. May use precision measuring instruments and complex test equipment.
- Measure dimensions of products to verify conformance to specifications, using measuring instruments, gauges, micrometers, or other methods to determine specifications, tolerances, processes, formulas, or measuring instruments required.
- Record inspection or test data, such as weights, temperatures, grades, or moisture.
- Mark items with details such as grade or acceptance inspection status.

Technology Skills

- Analytical or scientific software — Data analysis software; Design of experiment
- Computer-aided design (CAD) software — Autodesk AutoCAD; Computer-aided design (CAD) software and query software — Corel only software; Microsoft Office
- Electronic mail software — IBM Lotus Notes; IBM Notes; Microsoft Outlook
- Industrial control systems — Coordinate measuring machine software; Pro/Engineer

Knowledge

- Production and Processing — Knowledge of raw materials, production processes of raw materials, and distribution of goods.
- Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and trigonometry.
- English Language — Knowledge of the structure and content of the English language and grammar.

Skills

- Quality Control Analysis — Conducting tests and inspections of products, services, or processes to determine compliance with design specifications and quality control procedures, and notifying appropriate parties when needed, or initiating corrective actions if required.
- Active Listening — Giving full attention to what other people are saying, taking into account the context of the message, not just the content of the words.
- Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative ideas, conclusions, or solutions.
- Monitoring — Monitoring/assessing performance of product, other individuals, or equipment to ensure that quality, performance, or other requirements are met.
- Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Abilities

- Oral Comprehension — The ability to listen to and understand information and ideas presented through spoken words and sentences.
- Oral Expression — The ability to communicate information and ideas in spoken form to other people.
- Visual Observation — The ability to see details at close range within the field of vision.
- Facility of Closure — The ability to identify or detect a known pattern (a figure, word, or symbol) which is obscured by other figures, words, or symbols.
- Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong.

Work Activities

- Monitoring/assessing performance.

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

ISO 22222:2005(en) Personal financial planning — Requirements for personal financial planners

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body that has a technical committee has the right to be represented on that committee, governmental and non-governmental, in liaison with ISO, also to take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the member bodies are circulated to the member bodies for voting. Publication as an International Standard requires approval by 75% of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO is not liable for any such claims.

ISO 22222 was prepared by Technical Committee ISO/TC 222, *Personal financial planning*.

Introduction

This International Standard has been drawn up with the objective of achieving and promoting a globally accepted standard for individuals who provide the professional service of personal financial planning. Personal financial planning is a

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

ISO 15513:2000(en) Cranes — Competency requirements for crane drivers (operators), slingers, signallers and assessors

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- Annex A Assessment summary for crane drivers (operators)
- Annex B Assessment summary for slingers
- Annex C Assessment of crane drivers

Foreword

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International Standard ISO 15513 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 9, *Competency requirements*.

Annexes A, B and C of this International Standard are for information only.

Introduction

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

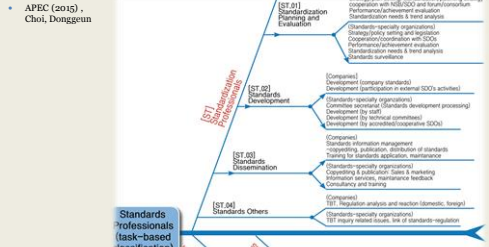
Element	Relevance of the element vs. methodological approach				
	approach focusing on competence	approach focusing on tasks	approach focusing on assessment		
0.1 Introduction*	recommended	recommended	recommended		
0.2 Foreword*	to be included	to be included	to be included		
1 Scope*	to be included	to be included	to be included		
2 Normative Reference ¹	possibly to be included	possibly to be included	possibly to be included		
3 Terms and definitions*	recommended	recommended	recommended		
4.1 Purpose*	to be included	to be included	to be included		
4.1 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	to be included	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 -

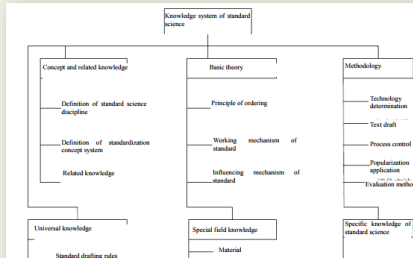
- **APEC - SCSC(2015)**
 - Phase 1 Project Results
- **Korea – KSA(2013~2017)**
 - Developed personnel competency requirements and qualification programs with two levels
- **China – CNIS (2011~2017)**
 - Knowledge System of Standard Science (2017) <https://goo.gl/1nBmWR>
 - Also, it was reported that 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/F6ZaFD>
- **USA - SES (2005~2017)**
 - Personnel competence requirements and qualification program at two levels <https://goo.gl/v0z7jE>
- **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 Today's Global World -



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

- Xuejing Wu, 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

Toshiki KUROKAWA, Yushi KOMACHI, Kazumari SUGIMITSU, Yukiko KAMJHO, and Mizuo HAYASHI
 Study Group on Skill Standard for Standardization (SS-SSS)
 in the Institute of Image Electronics Engineers of Japan (IEEE)

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 honorific).

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 (item) and skill evaluation criteria on capability (capability and knowledge required for the task) consisting of 9 (item). 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

- 10 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

KNOWLEDGE OF STANDARDS & CONFORMITY ASSESSMENT REQUIRED	TARGET LEVEL TO MEET	KNOWLEDGE OF STANDARDS & CONFORMITY ASSESSMENT REQUIRED	TARGET LEVEL TO MEET	FORMATS, MATERIALS, PRACTICES, OUTCOMES	PROF. SKILLS
R&D and INNOVATION:					
<p>*Role of standards and regulation in the development of products, services, processes, etc.</p> <p>* Strategic importance when formulating policy and making management decisions.</p>	<p>*A substantial understanding of the value and methodology of obtaining business knowledge about the development</p>	<p>*Role of standards and regulation in the development of products, services, processes, etc.</p> <p>** A substantial understanding of the value of compliance with standards in a competitive world marketplace.</p> <p>** Strategic importance of complying with standards and regulations for the different marketplaces.</p>	<p>*A substantial understanding of the value of compliance with standards in a competitive world marketplace.</p> <p>* A good understanding of the value of compliance with standards in a competitive world marketplace.</p>	<p>Standards and technical regulation identification course per area and/or project.</p>	<p>Gene train ion m - Spe identification course</p>
MARKETING & SALES:					
<p>*Role of standards and regulation in the development of products, services, processes, etc.</p> <p>* Strategic importance when formulating policy and making management decisions.</p>	<p>*A substantial understanding of the value and methodology of obtaining business knowledge about the development</p>	<p>*Role of standards and regulation in the development of products, services, processes, etc.</p> <p>** A substantial understanding of the value of compliance with standards in a competitive world marketplace.</p> <p>** Strategic importance of complying with standards and regulations for the different marketplaces.</p>	<p>*A substantial understanding of the value of compliance with standards in a competitive world marketplace.</p> <p>* A good understanding of the value of compliance with standards in a competitive world marketplace.</p>	<p>Standards and technical regulation identification course per area and/or project.</p>	<p>Gene train ion m - Spe identification course</p>

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

- Carla Freericks - 2013 ICES Conference and Meeting

#	Title	Courses of the Universities
1.a	Team-based, collaborative, team-player, positive approach, ...	Team-based
1.b	Ability 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; multicultural 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)



English - detected



Vietnamese



Thank you

Edit

Cảm ơn bạn