

### **3. RESULTS – TOWARDS DEFINITION AND CLASSIFICATION OF STANDARDS PROFESSIONALS**

#### **3.1 Definition of Standards Professionals**

When we discuss and cooperate how to develop the next generation of standards professionals, there is a prerequisite to find common understanding on ‘who and what standards professionals’ are — a definition and classification of standards professionals. Because there is *no universally used or accepted definition of standards professional as yet*, this project proposed and the used the following definition of standards professionals and drawing on their tasks.

By definition, a professional is someone who has a job that requires special training, education, or skill, while an amateur does the same for pleasure, not as a job. (see Table 5) Therefore, **standards professionals are those people who have job or business activities in the standards areas — standardization, conformity assessment, and metrology.**

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who have a job or business activities in the standards areas  
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<Table 5> Professional vs. Amateur (by Webster Dictionary Definition)

<p><b>Professional</b></p> <ul style="list-style-type: none"><li>- someone who does a job that requires special training, education, or skill</li><li>- someone who is a member of a profession</li><li>- someone who is paid to participate in a sport or activity</li><li>- someone who has a lot of experience or skill in a particular job or activity</li></ul> <p>(source: <a href="http://www.merriam-webster.com/dictionary/professional">http://www.merriam-webster.com/dictionary/professional</a>)</p>
<p><b>Amateur</b></p> <ul style="list-style-type: none"><li>- a person who does something (such as a sport or hobby) for pleasure and not as a paid job</li><li>- a person who does something poorly : A person who is not skillful at a job or other activity</li></ul> <p>(source: <a href="http://www.merriam-webster.com/dictionary/amateur">http://www.merriam-webster.com/dictionary/amateur</a>)</p>

### 3.2 Classification of Standards Professionals (the task-based approach)

#### (1) Overview<sup>1</sup>

The different standards-related activities can be clustered into three groups – standardization, conformity assessment, and metrology.

*Standardization* includes the developing, adopting, and disseminating of standards for products, processes, and management systems. *Conformity assessment* includes activities and procedures that fulfil specific requirements of standards, such as testing, inspection, certification, and their accreditation. The metrology pillar includes the process for a scientific and legal metrology system that ensures that measurements are made with appropriate accuracy and reliability both domestically and internationally<sup>2</sup>. A standards system of an economy can serve as the foundation for a national quality system and, further still, as a system for national technology innovations<sup>3</sup>.

Applying this classification of standards-related activities, we developed a preliminary classification of standards professionals in early 2014, which we then used as the basis of the project survey. After we have received comments from survey participants, interviewees, and project workshop participants throughout 2014, the classification was revised as described in this report.

Usually, these professional activities require a certain level of knowledge, skills, experiences, and education. These standards-related activities may be their primary (major/full) duty or a secondary (partial) duty in terms of task priority or time allocation. The duties and responsibilities of standards professionals may include the following tasks, but not limited to, the three domains of standardization, conformity assessment, and metrology, respectively.

Since the jobs and tasks in companies and standards-specialty organizations may be different, we distinguished the tasks where necessary. In this report, standards-specialty

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<sup>1</sup> The terms used here are defined in the following references:

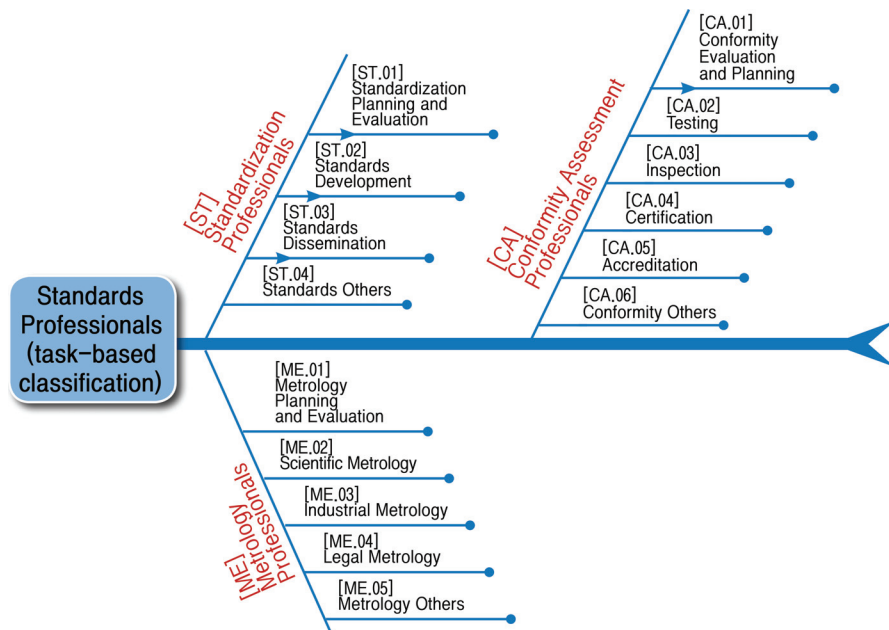
- ISO/IEC Guide 2 (Standards, Standardization)
- WTO/TBT Agreement (Standards, Regulations, and Conformity Assessment)
- BIPM website (Scientific/ Industrial/ Legal Metrology)

<sup>2</sup> ISO, UNIDO, 2009. The Conformity Assessment Toolbox. ISO/UNIDO, Geneva

<sup>3</sup> Choi et al, 2014, Standards as a catalyst for national innovation and performance – a capability assessment framework for late-comer countries. Total Quality Management & Business Excellence

organizations are those specialized organizations that are mainly dedicated to standardization, conformity assessment, and metrology. These organizations include national standards bodies (NSBs, usually members of ISO or IEC), standards developing organizations (SDOs), testing laboratories, certifications bodies (CBs), accreditation bodies (ABs), and national metrology institutes (NMIs). The organizations can be governmental, public, or private (either not-for profit or for-profit). Governmental regulatory agencies may be considered a specialty organization in the sense that they set and enforce mandatory standards (technical regulations).

**<Figure 3> Standards Professionals – Classifications (the Task-based Approach)**

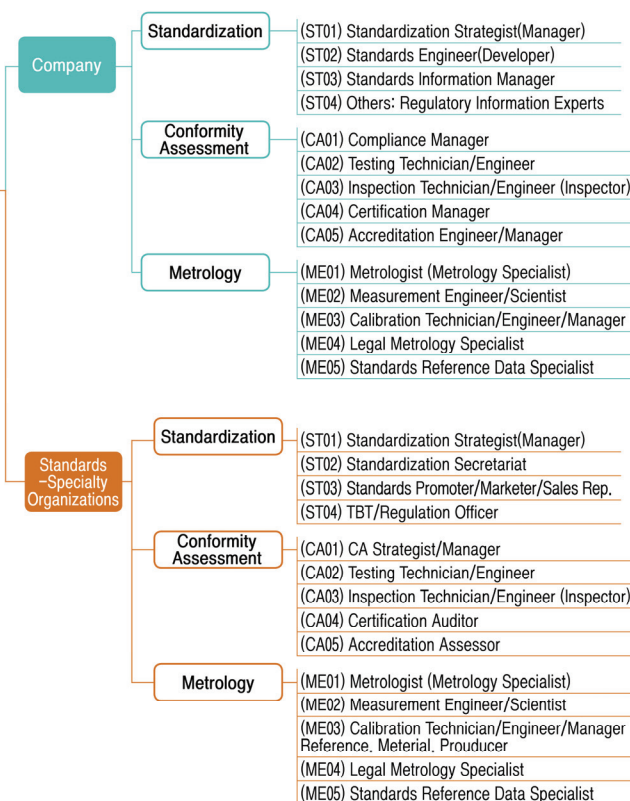


## (2) *Job Titles*

Based on our project survey and additional web survey and the project advisory group, we developed exemplary job titles for standards professionals both in companies and standards-specialty organizations. Some of the most commonly used job titles are *standards engineer* (company) or *standardization secretariat* (specialty organization).

<Figure 4> Standards Professionals - Exemplary Job Title

### Standards Professionals – Exemplary Job Title



### 3.3 Classification of Standards Professionals – Sub-Categories

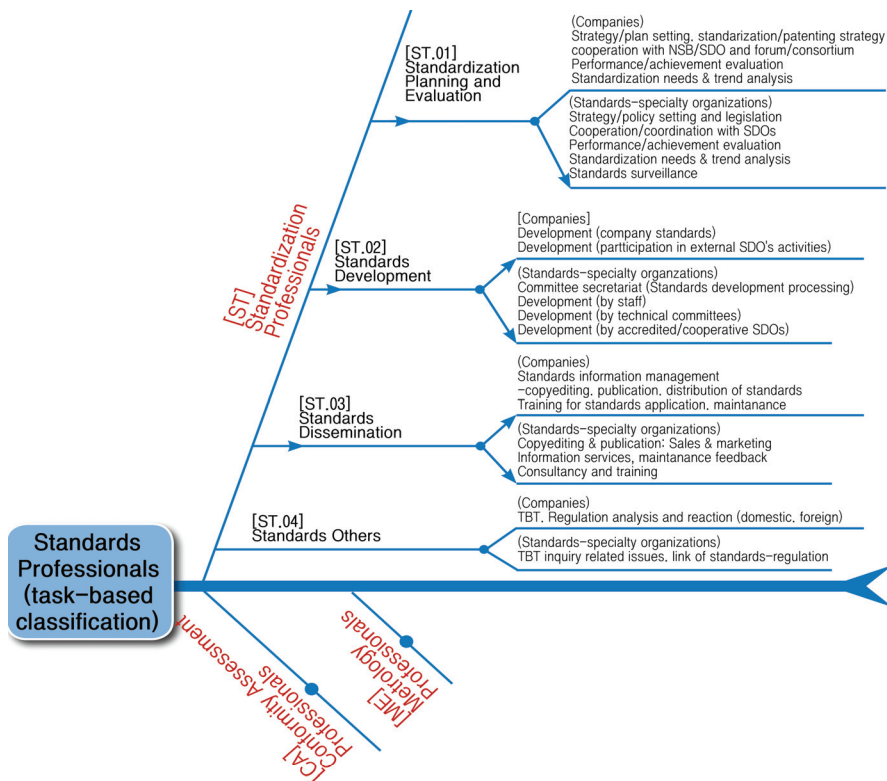
#### (1) [ST] Standardization Professionals

Standardization professionals are those who are involved in the tasks of Standards planning and evaluation [ST.01], Standards development [ST.02], Standards dissemination [ST.03], and Other Standards-related tasks [ST.04].

The major tasks of standards planning and evaluation [ST.01] include standards strategy/policy setting and legislation, standardization cooperation/coordination with SDOs, performance/achievement evaluation, and standardization needs and trend analysis in standards-specialty organizations. In companies, they also include the tasks of strategy/plan setting, standardization, and patenting strategy.

The more detailed tasks of standards planning and evaluation [ST.01], standards development [ST.02], standards dissemination [ST.03], and standards-related tasks [ST.04] are described in Figure 5.

<Figure 5> [ST] Standardization Professionals

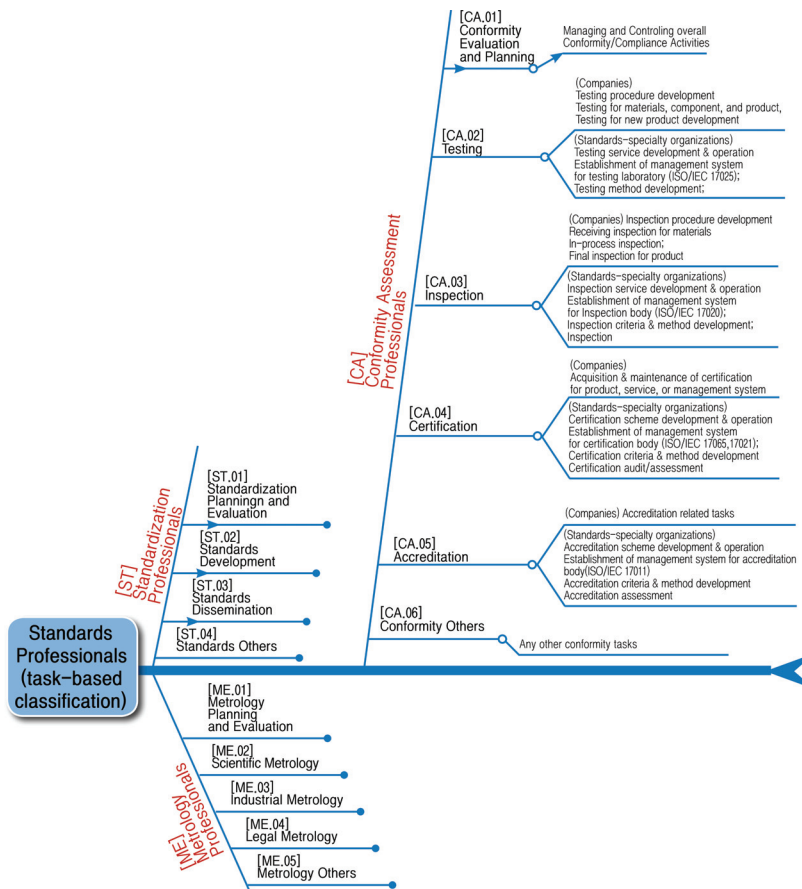


## (2) [CA] Conformity Assessment Professionals

Conformity assessment professionals are those who are involved in the tasks of Conformity planning and evaluation [CA.01], Testing [CA.02], Inspection [CA.03], Certification [CA.04], and Accreditation [CA.05].

The major tasks of Testing [CA.02] include, in standards-specialty organizations, testing service development and operation, establishment of a management system for a testing laboratory (ISO/IEC 17025), testing method development, and testing. In companies, these tasks also include testing procedure development, testing for materials, components and products, and testing for new product development. The more detailed tasks of Conformity planning and evaluation [CA.01], Testing [CA.02], Inspection [CA.03], Certification [CA.04], and Accreditation [CA.05] are illustrated in Figure 6.

<Figure 6> [CA] Conformity Assessment Professionals



### (3) [ME] Metrology Professionals (Metrologists)

Metrology professionals or metrologists are those individuals who are involved in the tasks of Metrology planning and evaluation [ME.01], Scientific metrology [ME.02], Industrial metrology [ME.03], legal Metrology [ME.04], and other Metrology- related tasks [ME.05]

The major tasks of legal metrology [ME.04] include in standards-specialty organizations policy and legislation for legal metrology, type approval, verification and periodical inspection for measuring instruments, and net weight certification for pre-packaged food. In companies, a major task is to secure compliance with the laws/acts applying to legal metrology.

The more detailed tasks of Metrology planning and evaluation [ME.01], Scientific metrology [ME.02], Industrial metrology [ME.03], legal Metrology [ME.04], Metrology-related other tasks [ME.05] are shown in Figure 6.

<Figure 7> [ME] Metrology Professionals (Metrologist)

