

The Role of FENDT - Prospect and Retrospect -

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NDT Families and Friends!

It is a great honor for me to deliver the Keynote Address to such a distinguished scholars and engineers as you are.

Today is a very special day for Koreans. It is called "Han Gul Nal", the day King Sejong made Korean Alphabet public. We all know that Han Gul is one of the best phonetic letters in the world, and we are very much proud of it.

Milestones of FENDT

Looking back - retrospect I suppose - the milestones of FENDT renders the very fact that we are orientals. It started grand oriental fashion.

In December of 1990 Prof. Takagi, then the President of Japanese Society for Nondestructive Inspection (JSNDI), sent me a Holiday Greetings with a little note indicating the formation of a small conference for Far East Countries. He specifically mentioned that for a start participation of Korea, Taiwan, and Japan would be preferable. Besides, if Korea host a conference in 1991, Japan will host in 1992 along with the 40th anniversary conference of

JSNDI.

Let's do it was the unanimous reaction of Board Members of KSNT. We thought then that the Asia-Pacific Conference on Nondestructive Testing (APCNDT) could do better than what it has been doing. APCNDT nominated a Korean representative who is not even a member of KSNT. For sometime we didn't even know what APCNDT were doing, except that it is not as versatile as European Counsel on Non-destructive Testing (ECNDT) in the rapid changing world.

When I contacted President Liu of Non-destructive Testing Society of China-Taipei (NDTSCCT), he was more pleased than me. Thus the FENDT'91 was set out in the spring of 1991. We did not make charters for FENDT. Three of us agreed to do it and we shook hand with trust and confidence. I call this "grand oriental fashion". Incidentally, the name FENDT was coined by professor Kwon, Oh-Yang of Inha University. As you all know he is one of the busiest man here today. We wrote the objectives of the conference as

- 1) to provide a forum for exchange of scientific and technical information, and
- 2) to promote friendship among scientists and

engineers in the Far East

Table. 1 shows a brief milestones of FENDT. The First Far East Conference on NDT in 1991 (FENDT '91) was held in Seoul, Korea. The meeting provided us a real forum for the exchange of information and cooperation at the society level. In view of the rather short

period allowed then for organizing a newly organized conference, it was considered a great success owing primarily to the enthusiasm of participants. The second (FENDT'92 in Tokyo, Japan) and the third (FENDT'94 in Taipei, Taiwan) FENDT's were held with continued success. The conference provided us opportunities for a systematic cooperation in this economically prosperous region. I understand that around seventy paper are presented in this conference, which we call it a success. Numbers of papers and participants are considered to be one of measure for the success of a technical conference.

Table 1. Milestones of FENDT

FENDT'91	November 14-16, 1991	Seoul, Korea
FENDT'92	October 12-14, 1992	Tokyo, Japan
FEDDT'94	November 3-5, 1994	Taipei, Taiwan
FENDT'97	October 8-11, 1997	Cheju-do, Korea

NDT Personnel Qualification and Certification

Now the question is why do we write a paper in the field of nondestructive testing? The answer is very simple and clear. We conduct NDT research to improve inspection technology, so that the safety and quality of product can be facilitated.

To conduct inspection we need equipments and qualified people. The very basic element is people.

Personnel qualification and certification systems differ country to country. We three, Japan, Taiwan and Korea, have different system, eventhough

similar items are being inspected during a day to day life.

I am not going to discuss the systems except to tell you that Korea has a very centralized system. Our technical environment dictate us to conduct American Society for Nondestructive Testing (ASNT) Level III examination annually. Some companies had to take JSNDI qualification examination as well for their domestic as well as oversea projects.

West vs East

Before we discuss further, let us digress a little bit to review historical background of East and West. We do this because the inspections are being done by people whose cultural background plays an important role to the result of an inspection.

Western countries have religious background primarily headed by Christianity and Judaism. Eventhough it has only 3,000 years civilization background, discovery of America in 16th century, and invasion of Africa, Asia, and Pacific show their outgoing and material oriented characteristics.

On the contrary Eastern countries enjoys comparatively less religious life, eventhough Buddhism, Confucism, and Shamanism were there in a mixed form. A traditionalism and respect for elders were flowing through 5,000 years of civilization. Orientals are more spiritual.

These things in mind, let us look into European Union, and their approach to personnel qualification scheme.

EU Approach

For a successful European Common Market, a Common Certification System must exist. "A Global Approach to Certification and Testing CE COM(89) 209" is an EC Document, which set a guideline for NDT people to work with and to aim at.

EU is equipped with powerful tools as is

shown in Table 2. EN 45013 was completed in 1989 as one of a series of European Norm (Standard) covering activities of assessment, and certification of NDT personnel. It is deep rooted to British criteria then. ISO 9712 was developed in order to provide a common minimum standard for central certification of the competence for NDT personnel. Using ISO 9712 as a "base line" EN 473 was developed, because of a frustration with a lack of progress in the development and approval of ISO 9712. Americans insistence such as a 15 year implementation period are being blamed for this.

Table 2. Major tools for EU countries

EN 45013 (1989)	General Criteria for Certification Bodies Operating Certification of Personnel
ISO 9712 (1992)	Nondestructive Testing - Qualification and Certification of Personnel
EN 473 (1993)	General Principles for Qualification and Certification of NDT Personnel

ISO 9712 which has been ratified by many countries including Korea requires National Certifying Body (NCB) and Qualifying Body (QB). Noteworthy requirements for the NCB are:

- Shall be non-profit Organization.
- Shall have no direct involvement in training of NDT Personnel.
- Recognized by the ISO member body of the country concerned.
- Shall initiate, maintain and promote the national certification scheme.

There are provisions for QB, which is defined as a competent organization

- Independent of the employer or responsible Agency - authorized by the NCB to prepare and administer examinations to qualify NDT Personnel.

ISO 9712 and Korean System

As said earlier, Korea has a very strong

centralized certification system for all technical fields. Examinations are conducted by Korea Manpower Agency (KOMA) which is a government sponsored non-profit organization. This means that the NCB and the QB as defined in ISO 9712 are being administered by KOMA as of today.

In the past we were told that a certification system must bear a non-government civilian oriented system. Thus KSNT has been working to change current system to more democratic (?) civilian oriented system. However we are now in a state of regrouping our fundamental principles. KOMA could be the NCB, but not the QB. KSNT is the prime candidate for the QB. It is conducting an in-depth study for reorganizing current system so that we can meet the requirement of ISO 9712. In addition, examination center is also being studied for an economic operation.

Power Tool

I personally do not mind ISO 9712 system. However I am concerned about the way it has been handled. There are many indications that it has been finalized by small number of European countries.

One of the most powerful tools EU own is so called ISO/CEN Vienna Agreement which signed 1990. It was made for

- Mutual cooperation,
- Exchange of information
- Speed up standardization work by avoiding redundancy.

We all know that ISO is for the world, and CEN is only for the Europe. We are concerned with the ISO/CEN relationship which would speed up the process, but renders an impression of localism. One of notable example is that ISO Technical Committee 135(SC 7) recommended adoption of EN 45013 as an International Standard.

Harmonization Efforts in Europe

ECNDT has a working group to promote

- Harmonization of certification system,
- Mutual recognition.

The working group members are PNC(England), DZP(Germany), SSNDT(Swiss), NORDTEST(Denmark · Sweden · Norway · Finland), DNV Certification(Norway), SCCNDT(Sweden), Darntest Cert (Denmark), SKO(Netherland). Besides France (COFREND) made mutual recognition agreement with eleven countries. They are Netherland(SKO), Spain(AEND), Belgium (BANT), Swiss(ASEND), Germany(DGZfP & SECTOR Cert), Austria(OGfZP), and Italy(CICPhD).

In Europe each country appears to have better mutual understanding and knowledge of national attitude through communication and interaction.

The European standards EN 45013 and EN 473 together with national accreditation systems, EAC MRA (the European accreditation of certification mutual Recognition agreement) and ECNDT MRA represents the ultimate goal of standardization of certification systems. They are for a very limited number of European countries. However it's impact will be worldwide. We, the Far East countries must extend our scope of standards to supplement European dominated harmonization work.

Summary

Being latecomers to the industrialization, Pacific rim countries except the U.S.A. are doing very little in developing the universal certification system. One should note that Asian Pacific region enjoys the highest economic growth rate, and there is a good possibility that it will be the center of economic activities of the world in the next century.

It appears that ISO and CEN share similar specifications in numerous areas. ASNT is being changed to cope with the trend with the introduction of ACCP. Although we may have to adopt the new system someday, we should pay attention and make concerted effort to include our own practice in the global standards. We are the countries in the Far

East Region with similar culture and tradition, which are quite different from those of western countries. We hope that Japan should play an important role in this matter, who has been chaired the ISO TC135 since 1993.

In the beginning of this decade, there has been a trivial but troublesome matter that who is representing the NDT Society of member countries in Asia-Pacific Conference on NDT. The problem appears to be solved since the establishment of FENDT. For the next decade, actually next century, FENDT will have to accomplish another important role for countries in the Far East Region to form a strong coalition for its survival in the western dominant world. Immediate issue is to establish Far East Working Group for Harmonization and Mutual Recognition of Qualification and Certification of NDT Personnel. To realize this Japan must play a leading role with the cooperation of expanded FENDT member countries including China and Russia. As the continued prosperity expected in this region, FENDT should continue its role for the next century.

We, the FENDT countries, must move forward for internationalization(國際化). However we must realize that it all start from SELF IDENTIFICATION. We can identify ourselves by actively participating in FENDT. I would like remind you the concluding remark that I have made in the congratulatory speech at JSNDI 40th Anniversary Conference and FENDT'92.

JSNDI is too precious to be Japan's sole possession.

Starting from the Far East, JSNDI shall become one of the leaders of the world.

I sincerely hope that JSNDI take initiatives and leaderships in the future activities of FENDT countries.

I would like to close my talk with

" We must hang together, or

We shall be hang seperately."

Gam Sa Ham Ni Da.