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**A VISION FOR KOREA-U.S. COOPERATION
IN SCIENCE AND TECHNOLOGY:
LOOKING TOWARD THE 21ST CENTURY**

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Introduction

Korea has experienced rapid and sustained economic growth for the last 30 years, rising from one of the most poverty-stricken countries in the world, to its position now as the eleventh largest economy and the thirteenth largest exporting country globally. Over the same period, per capita GNP rose from \$87 in 1962, to \$10,000 in 1995. Korea is preparing now to join the OECD by the end of 1996.

One of the reasons for this impressive economic growth has been the enduring relationship between the Republic of Korea and the United States. This relationship is best depicted by a few examples. Approximately 60 percent of Koreans who received Ph.D.s overseas in fields of science and technology, did so in the United States. The United States is the largest exporter of technology to Korea, surpassing Japan in 1994, and is Korea's number one export market.

The U.S.–Korean relationship has undergone tremendous changes over the past three decades. In the early stages of the relationship, Seoul was completely dependent on Washington in virtually all areas—from political, military, and economic to social, and cultural affairs. It was during this period of dependence, from the 1950s to the 1970s, that the Korean Institute of Science and Technology and the Korea Advanced Institute of Science and Technology were established with the assistance of the United States.

During the 1970s until the mid-1980s, the U.S.–Korean relationship underwent significant changes in science and technology in the wake of the U.S.–Korea Science and Technology Agreement as well as the termination of U.S. aid grants. During the transition period from the mid-1980s until the early 1990s, a new relationship formed based on mutual respect and benefit. This partnership has culminated in the conclusion of the U.S.–Korea Science and Technology Cooperation Agreement of 1993.

U.S.–Korea Fora on Science and Technology

The 1993 Agreement called for periodic fora to provide an impetus and to cultivate new cooperative relationships. It is quite encouraging that the three fora that have taken place to date have been instrumental in encouraging a constructive atmosphere for active exchange and cooperation between the science and technology communities of the two countries. It is also quite noteworthy that both countries are making an earnest effort to translate the results of the fora into practical cooperative programs. For example, the Ocean Science and Technology Forum was designed to focus on the issues of the oceans in an effort to identify specific areas for cooperation.

In addition, there is visible progress in our cooperation under the Agreement with the new Ministry of Science and Technology and Department of Energy arrangement for the implementation of nuclear fusion cooperation and with the exchange of memoranda of understanding between nuclear research institutes of both countries.

As in the past, close U.S.–Korea cooperation will be critical to future progress in Korea. This is the inevitable outcome of the deep, mutual relationship between our two countries in economic, social, and political areas. However, times have changed, and Korea is now able to contribute to the economic progress of the United States as well. The future direction of U.S.–Korean science and technology cooperation should coincide with our respective national economic development.

New S&T Policy Direction

Korea is pursuing the development of its science and technology enterprise as a means to achieving its national goal of joining the ranks of the advanced industrialized countries by the 21st century. A national consensus has been reached in Korea on the importance of furthering science and technology as a prerequisite to becoming an advanced country. Therefore, the Korean Government has set the basic direction of its science and technology policy as follows:

First, Korea will promote science and technology development to lead the “sekyewha” (globalization) policy. Second, Korea will reorient its science and technology development policy from learning to creation. Third, emphasis will be given to the role of science and technology for improving the quality of life of the people.

Under this basic policy direction, the Korean Government is implementing the following strategies:

- Korea will gradually internationalize its R&D system and improve its science and technology infrastructure.
- Policy emphasis will be put on nurturing creative scientists and engineers by transforming the policy focus from quantitative expansion into quality enhancement. (To accomplish this, our domestic human resource development system will be connected with a world-wide human resource development system.)
- Korea will develop its social and economic environment to cultivate a sound science and technology culture which can support active innovation.
- Korea will strengthen international science and technology cooperation to utilize world-wide scientific and technological resources, as well as to contribute to global scientific and technological progress.

This new set of policies is indicative of Korea’s strong will not only to pursue its own economic advancement, but also to become a responsible member of the international community.

A Restructured S&T Relationship

The major task facing the United States and Korea is to restructure our relationship on the basis of mutual benefit. To this end, Korea is pursuing the following science and technology cooperation:

- Korea seeks cooperation on “big science” issues such as oceans, nuclear fusion, nuclear energy, aerospace, and biotechnology.
- The government will galvanize the private sector to expand science and technology cooperation through existing and new cooperative programs such as the U.S.–Korea Special Cooperation Program of the National Science Foundation (NSF) and the Korea Science and Engineering Foundation.
- Korea will actively contribute to global science and technology development through close U.S.–Korean cooperation in multilateral organizations such as APEC and the OECD.

The Oceans

The oceans, a treasure house of such natural resources as food, strategic minerals, energy, and space, is said to be the “last frontier” on this planet. In light of its importance, it is quite natural for the United States and Korea to share a special interest in ocean development. In 1992, NSF and the National Oceanic and Atmospheric Administration (NOAA) jointly formed a Blue Ribbon Panel on U.S. Ocean Resources 2000. The panel’s recommendations set the stage for developing a U.S. national strategy for productive use of ocean resources.

Korea also established its own ocean development policy plan in January 1996 and now is preparing a strategic action plan. On the inauguration of Korea’s Sea Day in June of 1996, President Kim Young Sam announced a plan to create a new Ministry of Ocean Affairs in order to support Korea’s efforts to sustainably develop the oceans more effectively.

Korea’s ocean development policy aims to promote industrial use of the oceans, enhance the ocean’s productivity, and preserve ocean environments. Based on this policy, the Korean government will set up a nation-wide ocean management system, maximize the social and economic value of the ocean resources, and improve the quality of the ocean environment. Strategic emphasis will be placed on sustainable development and preservation of ocean resources, securing technology for developing

strategic minerals and energy resources, utilizing the ocean space, and strengthening ocean environmental monitoring systems.

Korea's ocean development policy is similar in many ways to the Blue-Ribbon Panel on U.S. Ocean Resources 2000 which stressed first, the promotion of the U.S. ocean industry; second, the recapturing of U.S. exports of ocean resource products and technologies; and third, the advancement in technology toward effective and sustainable ocean resource applications.

The concurrence of the ocean policies of the United States and Korea enhances the possibility of mutual cooperation in ocean development efforts. Moreover, a well-developed personal network between Korean ocean scientists, most of whom were educated in the United States, and their American counterparts, can contribute to bilateral ocean science and technology cooperation.

Joint U.S.-Korea cooperation in ocean resource development and ocean communication technology is already under way. Cooperative programs include:

- The Korea Ocean R&D Institute (KORDI)-U.S. Geological Survey joint investigation of the development of sea-bed manganese nodules
- KORDI-Woods Hole Oceanographic Institution joint research on ocean acoustics
- KORDI-NOAA exchange of ocean science information.

Despite these programs, there have been few results to date. Therefore, Korea would like to see a comprehensive cooperative program developed which encompasses joint ocean science investigation and information exchange, and joint research on global environment and climate change, ocean resource development, and environmental protection.

To revitalize international cooperation in ocean science and technology, Korea has set forth the following policy:

- First, Korea will pursue its policy objectives in accordance with international laws concerning ocean development and preservation and will revise domestic ocean laws so that they conform with international laws.
- Second, Korea will actively participate in international ocean R&D programs not only as a means to develop and acquire technologies for ocean development, but also to contribute to the advancement of ocean science and technology.
- Third, environmental protection is a top priority for international cooperation. Korea will actively involve itself in international joint efforts to deal with issues of global concern.

I firmly believe that U.S.–Korea ocean science and technology cooperation will make our two countries leaders in the global effort to organize intelligent utilization of ocean resources in an environmentally beneficial manner for the future of all mankind.