Agenda Item 9: Spin-off Benefits of Space Technology: Review of Current Status

Republic of Korea National Statement

Sixty-eighth Session of the Committee on the Peaceful Uses of Outer Space

June 27, 2025

Thank you, Chair.

The ultimate aim of space development lies in enhancing the quality of life for all humankind. It is our collective responsibility to ensure that the benefits of space technology translate into tangible advancements for industries and societies here on Earth.

In this regard, the Republic of Korea is actively promoting programs for technology transfer and commercialization, with the objective of expanding the application of space research and development to the private sector and to everyday life. We would like to share some of the examples of successful spin-off of space technologies in Korea.

First, the connector valve system used in the propellant supply mechanism of the Korea Space Launch Vehicle (KSLV-II), which features high-reliability fluid control technology, has been adapted for use in semiconductor industry. Private companies have commercialized this as a

precision fluid valve used in semiconductor manufacturing equipment – an excellent example of launch vehicle components being integrated into high-precision industrial process.

Second, cryogenic fluid manufacturing technology, developed to improve fuel efficiency and maintain fluid stability in extreme cold conditions for space applications, has been transferred to the private sector. It is now being used to develop cryogenic centrifugal pumps for hydrogen energy storage and transport, thereby contributing to greater economic efficiency in the energy sector.

Third, high-precision temperature sensor technology, originally developed for satellite thermal vacuum testing, has found applications in semiconductor manufacturing process, enabling accurate temperature measurement and control in vacuum environments. In addition, we are also participating in the K-RadCube project, a CubeSat for space radiation measurement to be onboard Artemis II, conducting performance tests of Korean semiconductor components in the space environment as part of efforts to evaluate in space-based conditions.

These cases demonstrate how space technologies are being applied across a diverse range of advanced industries including energy, semiconductors and materials, contributing meaningfully to technological innovation and industrial competitiveness.

The Republic of Korea continues to actively support the private

sector, particularly SMEs, in utilizing space technologies. Furthermore, we are committed to sharing these technologies with developing countries to foster inclusive innovation and to support the realization of the SDGs.

Thank you.