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KARI plays pivotal role in Korea's space development

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KARI plays pivotal role in Korea's space development

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The year 2023 was a year of significant events for Korea's space industry. The Danuri, Korea's first lunar orbiter, which entered the moon's orbit in December 2022, officially began scientific observations from lunar orbit in January. In May, the country successfully launched a Nuri space launch vehicle for the third time, placing eight satellites in orbit, and solidified its position as an emerging space power.

These scientific achievements in the space sector by Korea could not have been possible without technologies developed by engineers of the Korea Aerospace Research Institute (KARI).

Lee Sang-ryool, president of KARI, said that Korea's space development capabilities have shown significant improvements through its successful space activities such as the Danuri and the Nuri at a time when the importance of the space sector is increasingly emphasized.

He also said that KARI would contribute to further enhancing Korea's competitiveness in the space sector through its top domestic space development capabilities.

"KARI has been leading the national space development projects and is the institute that has secured the highest development capabilities in the space sector in Korea. It is the only one in Korea that has satellite and spacecraft assembly test facilities and comprehensive launch facilities for space launch vehicles," Lee said in a recent email interview with The Korea Times.

"KARI has contributed to improving the quality of people's lives in various fields such as free access to space, Earth observation, national security and weather observation through the development of launch vehicles and satellites. We have taken the first step in Korea's space exploration by developing the Danuri lunar orbiter and performing navigation trajectory design and operation," he added.

"We will actively transfer the technologies accumulated so far to the private sector to support the independence of the space industry and strive to activate the related ecosystem."

At a time when not only the United States and other nations with



Lee Sang-ryool, president of Korea Aerospace Research Institute (KARI)

advanced space programs, but also many other countries around the world are jumping into space development, Korea has also joined their ranks, partnering with advanced countries in space technology to create action plans for space exploration, space mining and satellite launches. In line with the plan, President Yoon Suk Yeol announced a roadmap in 2022 that Korea will land on the moon by 2032 and Mars by 2045.

Regarding Korea's space policy and the development direction of the space industry, the KARI president emphasized that further revitalizing the space development is a key policy direction for the development of the Korean economy, and that continuous R&D and policies should be supported for this purpose.

"The policy orientation of space development can be seen as the betterment of citizens' lives, the guarantee of national security and the sound growth of the national economy, as stated in Article 1 of the Space

Development Promotion Act," Lee said.

"I think that the space economy, which President Yoon has declared as a vision, is a key policy direction for the development of the national economy. In order to do this, consistent policies must be continuously promoted so that strengthening the competitiveness of the space industry, fostering service industries such as autonomous vehicles and urban air mobility (UAM) linked to the Korean version of satellite navigation system and 6G communication satellites and strengthening the capabilities of space exploration and space resource development can play a big role in the future development of the national economy and improving people's lives."

"The KARI president said that cooperation with allied countries is also important for Korea to further develop in the space sector. In particular, he emphasized the need to strengthen cooperation with the U.S., noting that the space sector is linked

directly to military security. Last April, President Yoon emphasized the importance of cooperation with the U.S. He visited NASA's Goddard Space Center, and announced a joint declaration on space cooperation.

"The space sector is an area of science and technology, as well as economy, security, diplomacy and industry. The declaration of a leap in the Korea-U.S. space alliance last April is significant in that it provides an opportunity to expand R&D cooperation such as participation in joint projects, share knowledge, exchange personnel with each other and promotes the development of the space industry," Lee said.

"The U.S. has traditionally been our economic and security ally, and as Korea's space capability has been improving recently, it seems natural and necessary to expand the strategic partnership in the space sector, both in terms of its diplomatic role in the international community and the mutual sharing of space assets."



The Nuri space launch vehicle blasts off from Naro Space Center in Goheung, South Jeolla Province, May 25, 2023, to place satellites into orbit 550 kilometers above the Earth.



A man takes a photo of a mock-up of a Nuri space launch vehicle outside the South Gyeongsang Provincial Office in Changwon, Jan. 9, when the National Assembly passed a bill to establish the Korea Aerospace Administration (KASA).

"KARI, KASA will lead space development together"

The KARI president also emphasized the role of the Korea Aerospace Administration (KASA), after the National Assembly passed its establishment bill recently.

KASA is an administrative agency in the space sector that Korea plans to establish in May. On Jan. 9, the National Assembly provided a legal basis for the establishment of KASA by passing a revision to the Space Development Promotion Act.

Lee said that KASA will play a key role in overseeing Korea's space policy, R&D and international cooperation, and leading cooperation with related industries, along with KARI, which is responsible for technology development.

"Space development has now become a key element for defense and diplomacy, industry and major

social infrastructure. It is necessary to have a dedicated agency to holistically coordinate the space-related issues of the various ministries," he said. "I think that there can be a division of roles where KASA oversees policy, R&D and international cooperation as a dedicated agency, and subordinate agencies like KARI focus on R&D and securing core technologies."

With the establishment of KASA, he said the government-led space development projects can now be expanded further to the private sector and investment can also be stimulated.

"So far, space development has been focused on government-led technology development, resulting in a very weak structure in terms of the space industry. If KASA becomes the main body and promotes the development of the space industry, the related industry will also be able to invest actively," Lee added.