

# WARPSPACE Has Completed the Study Contract of Cislunar Optical Communication Commissioned by JAXA

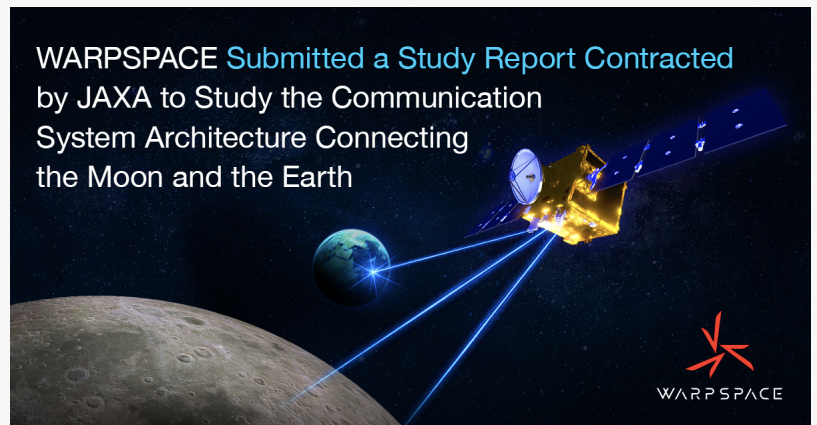
*WARPSPACE conducted a conceptual study and verification of the practical application of the communication system for various lunar missions.*

TSUKUBA SCIENCE CITY, IBARAKI, JAPAN, June 1, 2022 /

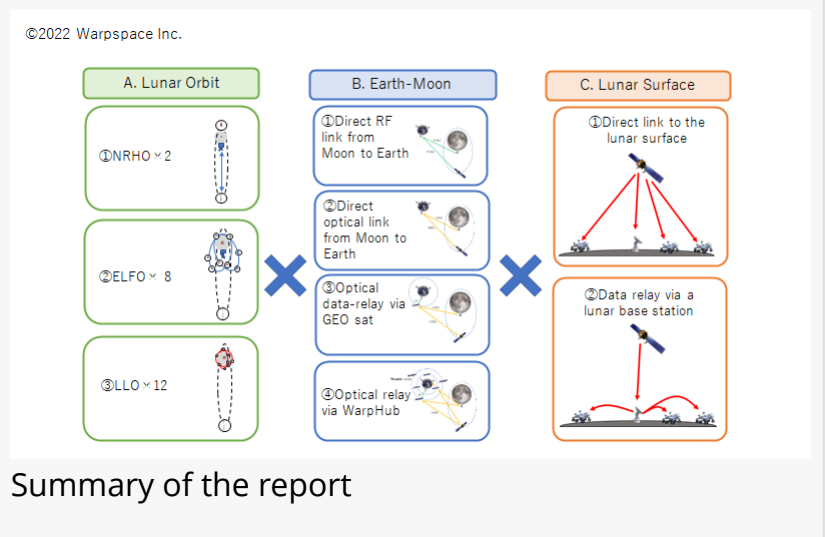
[EINPresswire.com/](https://www.einpresswire.com/) -- - On January 5 of this year, WARPSPACE was commissioned by the Japan Aerospace Exploration Agency (JAXA) to study the practical application of a communication system linking the Moon and Earth\*1. WARPSPACE conducted a conceptual study and verification of the practical application of the communication system for various lunar missions from different perspectives, including technology and cost, and delivered a report of the results to JAXA.

In this report, we examined possible options for communication systems on the Moon for (1) Near Lunar Communications, (2) Lunar-Earth Communications, and (3) Lunar Surface Communications and evaluated the trade-offs in terms of cost, sustainability of communication conditions, and maintainability for each combination of these options.

Currently, international exploration programs to the Moon and Mars are underway, led by the Artemis Project. In this context, the private sector's commitment is increasing in Japan and abroad, a change from the past when government agencies took the lead in everything from planning to development. In recent years, the United States, in particular, has been promoting "anchor tenancy," in which the government provides a certain level of procurement



Key Visual for Cislunar Study



Summary of the report

compensation for private-sector industrial activities to stabilize the industrial base. Anchor tenancy allows the government to improve cost performance while controlling the risks of its programs while at the same time allowing companies to promote their technologies and businesses. As a result, the U.S. space industry remains highly competitive internationally.

In Japan, we hope that the Moon exploration program will be further strengthened by the participation of various private companies, starting with this contract, and by the cooperation of private companies as they gain international competitiveness. In this study, WARPSPACE examined designs for various missions to the Moon by different private companies.

WARPSPACE's CTO Akihiro Nagata commented on the contents of this report and prospects from a technical perspective.

"Until now, radio wave communications have been used mainly for lunar and deep space exploration. Of course, this is the current standard for communications in space, and there are many examples of actual use. But there are issues with communication capacity and the size of the terminals. There is a concern that the current capacity and terminal size will not be sufficient to meet the demand in the coming decades when various types of private research and exploration on the Cis-lunar and the Moon will be in full swing. On the other hand, optical communication has a high capacity and smaller terminals than radio waves. You can configure those terminals for long-distance communication with low power consumption. Therefore, this report has considered radio waves and optical communications as essential communication options. We still see a challenge with the optical communication networks in space to be put into practical use, but we aim to be the first private company in the world to launch commercial services based on a minimum viable product (MVP) strategy. In particular, as each country and company competes with emerging in its technological field, we need to be the de facto standard for optical communications in space and be the first to enter service.

WARPSPACE will continue to work on developing the "WarpHub InterSat" optical communication service in space while collaborating with governments and private businesses around the world to contribute to this significant global challenge.

\*1:The official name of the project is "Study on the Development of Positioning and Communication Technologies for Lunar Activities"

Ryota Takahashi  
WARPSPACE Inc  
+81 29-856-8128  
corporate@warpspace.jp  
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