

# FLIGHT TEST RESULT OF VEHICLE HOLDING DEVICE CONSIDERING LAUNCH VEHICLE MOTION OF NURI (KSLV-II)

Seongpil YANG<sup>1</sup>, Daerae KIM<sup>1</sup>, Sunil KANG<sup>1</sup>

<sup>1</sup>*Launch Complex Development Team, KARI, Daejeon, KOREA*

spyang@kari.re.kr

**Abstract:** In June 2022, the second flight test of the Nuri (KSLV-II) was successfully conducted at the Naro Space Center LC-2(2nd Launch Complex) located in Goheung, South Korea. The LC-2's Launch Pad (LP) is composed of various Mechanical Ground Support Equipment (MGSE). The Vehicle Holding Device (VHD) is one of the MGSE that holds the Launch Vehicle (LV) on the LP and softly releases the LV that is ready for liftoff. Since the VHD is a mechanical device that moves coupled with the LV, an operation test with the LV is essential. But there is a limit to the test linked to the actual LV motion in the flight test step only. Therefore, before the flight test, to confirm the movement of the VHD coupled to the LV, the operation test of the VHD reflecting the LV dynamic characteristics is essential. In this paper, dynamic analysis of VHD linked to LV and operation test results were compared. And we compared how similar the analytical approach was to the results obtained in the actual flight test. In addition, based on the data obtained from the factory test, the thrust of the LV was reviewed in the actual flight test. Based on these research results, it is expected that it can be used for research and development of VHD of LV scheduled in the future.