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THE CLASSIFICATION AND ANALYSIS OF THE ERROR AND FAULTS DURING KSLS COMPLEX DEVELOPMENT

Abstract

KSLS (Korean Space Launch System), was developed for the launch of spacecraft from Korea Republic territory into the Low Earth Orbit (LEO). KSLS consists of Korean space launch vehicle (KSLV) and ground complex (GC). Every composition of KSLS was developed according to the Test Plan during each phase. In this study, the Assembly Complex (AC) and Launch Complex (LC), which are directly concerned with the Launch Vehicle (LV) and has several facilities, are focused on.

AC and LC were qualified by the complex qualification test after factory tests and Autonomous Tests (AT) of each facility. Qualification Tests (QT) were carried out using LV mock-up to check the final interface between Launch Vehicle and Ground Complex. During the development of KSLS, Autonomous Tests of Assembly Complex were conducted in 2008, and ATs of LC were conducted until the early of 2009. And Qualification Test of AC and LC were performed in the first half of 2009.

The errors and faults during the AT and QT of ground complex were classified and analyzed in this study. The possible errors and faults during the AT and QT in case of the addition of facilities and the extension of ground complex or the development of new ground complex can be estimated with these analysis data. And necessary measures can be taken beforehand not to occur that kind of error and faults. So this study is expected to be used for the reduction of the cost and time for the development of ground complex.