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SPACE TRANSPORT SYSTEM FOR INTERNATIONAL MOON BASE CREATION

Abstract

Taking into account the growing popularity of the subject of exploration of the other celestial bodies, Yuzhnoye SDO has performed the study of possible configuration of International Moon base as well as technology for its delivery onto Moon surface. Moon space transport system (MSTS) is a basis component for the Moon base modules delivery to the assembly place. MSTS includes a superheavy class launch vehicle Krypton and a space rocket stages (tugs) for flying to the Moon. This system components are developed taking into account the existing Yuzhnoye SDO experience in the area of Zenit and Antares space launch systems with providing the minimum amount of cost on both the basis system components development and their serial production. The conducted analysis of variants made it possible to find more simple and optimized on amount of cost MSTS configuration, which provides a solution of delivery task with required level of reliability and relatively short terms of its creation. The choice of optimal set of MSTS components, rational combination of already existing and newly developed technologies as well as use of existing capabilities of Ukrainian and international cooperation, equipment of SPA "YMZ" and Yuzhnoye SDO preproduction make it possible to ensure the cost-effective execution of delivery operations of International Moon base components to the place of its assembly. The report presents the configuration of Moon space transport system, its basis components, technical features and payload capabilities, required phases of establishment and possible variants of cooperation while its establishment. The preliminary estimation of terms and cost on MSTS establishment and its operation is performed.