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Modern Day Space Elevators Entering Development (3)

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EFFECTIVENESS OF UTILIZING MARINE WARRANTY SURVEY
FOR OPERATIONS IN MARINE NODE OF SPACE ELEVATOR SYSTEM

Abstract

Space Elevator System is expected as an infrastructure to transport massive amount of freight between earth and space. The system would be aggregation of space node and marine node. Author had suggested a flexible and movable Marine Node concept in IAC 2018 and have been updating the concept with taking account of the latest marine technology. In aspect of the system configuration, it can be said that the Marine Node is a fundamental part of Space Elevator System. Integrity of the economy and sustainability of the system will heavily rely on the safety management of marine operations. In the current marine fields, to make various international vessels conform to uniform health, safety and environment standards, classification societies (such as ClassNK, ABS, DNV and etc.) have been taking a role to validating them. For dedicated vessels and platforms in the Marine Node activities, classification would be utilized. However, is it enough to validate integrity of safety operations in a part of the Space Elevator System?

For costly and high-risk transient operations, such as recent offshore windfarm constructions and maintenance works, arranging Marine Warranty Survey has been common and indispensable requirement from underwriters for the insurance. For operations related to Marine Node activities, Marine Warranty Surveys would be required to validate if the work processes are following industrial standards and to reduce the risk level.

This report describes effectiveness of setting Class-standard for dedicated vessel/platforms for Marine Node and importance of Marine Warranty Survey for their operations, with showing risk assessment based on the latest concept of the Marine Node configuration. Through the study, specific required standards for the Marine Node vessels/platforms and critical operation phases have been revealed. Risk mitigation by applying Marine Warranty Survey has been confirmed.