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A NETWORK OF EQUATORIAL GROUND SEGMENT FOR COLLECTION, DISSEMINATION AND ARCHIVING DATA FROM A CONSTELLATION OF LEO SEMI-ACTIVE INTERFEROMETRIC SAR SATELLITES

Abstract

The use of small semi-active SAR satellites performing interferometric operations within the equatorial region suggests potential international cooperation between space agencies, commercial enterprises and nations. This paper discusses the general ground segment architecture required to ensure the mission requirements for a near-real-time data, is met. To this end, the criteria for selecting the locations of several ground segments will be highlighted. Furthermore, a hierarchical structure of the ground segment network shall be proposed. The process of data dissemination and archiving within the network suggests the use of radio frequency and/or physical transportation with adequate data protection. An assessment of the quality of daily interferometric data downlinked by the constellation of satellites, to the network of ground segment is described. Finally, a discussion on the benefits of a space mission involving both the space and ground segment and thereby suggesting collaboration between various entities, will ensue. The benefits include the acquisition relatively cheaper data, which potential assist with national security, border control, town planning and traffic monitoring.