EARTH OBSERVATION SYMPOSIUM (B1)
Poster Session (P)

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# ON THE FULL-CYCLE AND INTEGRATED HUB-STYLE MISSION PLANNING OF THE LAND OBSERVATION SATELLITES SYSTEM

**Abstract**

The mission planning of earth satellite observation generally refers to the optimized use of satellites' payloads. According to relevant experiences in project construction, this paper puts forth the concept of the integrated hub-style mission planning on the basis of consumers' satisfaction and data's timeliness. This concept takes the ground processing center as the integrated service point, and data demands of difference levels of users as the driving force. It fully considers the practical problems like station resources construction lag and data transmission link frequency interference conflicts, reasonably plan the satellite payloads data reception stations resources, monitor and control resources and data processing resources, so as to implement the remote sensing data from a data request, overall planning, telecontrol, data acquisition, data processing and the unified distribution in the whole process of mission planning model. This model effectively solves the problems like the difficulty to match single satellite programming model with user demands, and the low efficiency of resource use. Besides, the paper seeks to explore relevant elements, technology and techniques which are necessary in such mission planning. The author thinks that from the vintage point of systems engineering, the commercialization of satellite observation products requires the full-cycle integrated mission planning that covers the period from the beginning of a user's order to the distribution of final data products, among which dispatching satellites' payloads is only one of important links. During the cycle, activities and constraints related to land support systems and other elements should also be taken into consideration. The comprehensive consideration including points of data acquisition, processing, archiving and distribution will make mission planning more complicated, which needs to be studied theoretically and practically. The full-cycle and integrated hub-style mission planning coordinates with national policy of civil remote sensing satellites. It is of great significance to deliver remote sensing products with high quality and high timeliness to every professional user through remote sensing data planning and major processing points, which demonstrates in two aspects. The first aspect is that it helps to achieve the win-win situation where different users get what they want and the state reduces investment in this field. The other one is that it is facile to monitor various satellite data and in return promote technology advancement of satellite processing and construction, which eventually stimulates the development and progress of aerospace remote sensing technology.