

Interactive Presentations (IP)
Topic 11 - Interactive Presentations (11)

Author: Mr. Zhao Yang

Beijing Institute of Spacecraft System Engineering, China Academy of Space Technology (CAST), China,
abc2709786@126.com

FLOW-SHOP TESTING MODE DESIGN OF BATCHING SATELLITES

Abstract

A kind of new schedule rule for batching satellites during the stage of AIT comprehensive production is studied. A novel flow-shop mode based on testing islands is proposed. The key elements of each island are defined, such as the access conditions, site and equipment management method. Besides, HFSP mode is constructed to solve the satellite AIT production scheduling problem, and a multi-layer coding genetic algorithm is designed to optimize the schedule process. Taking the production data of global navigation satellites during AIT stage as an example, the traditional AIT scheduling strategy is compared with the optimal one of flow-shop production. The simulation results show that the optimal scheduling results of 8 satellites in AIT stage are obtained by using the test island flowshop testing mode, which reduces the scheduling time by 13.7% compared with the traditional testing process. It is verified that the application of test islands testing mode and multi-layer coding genetic algorithm can help realize intelligent scheduling strategy design, and optimize production resource scheduling model on AIT platform of batching satellites.