DRS has the capability of receiving RF signal transferred from KOMPSAT-2 satellite and generating preprocessed image data that is a kind of raw image data for standard image production. The products generate from this system are comprised of 1R and 1G product upon having a geographic coordinates. In the following paragraph, it is described that DRS configuration, data processing procedure and product characteristics and then, the value-added image production test such orthoimage is introduced.

[VI-3-4] The Qualification Test of KSLV-I(NARO) Assembly Complex

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Ground Complex, which is located at Naro Space Center, consists of Assembly Complex(AC) and Launch Complex(LC) which is necessary for successful launch of KSLV-I(NARO). AC consists of Assembly/Testing Building(ATB), Payload Processing Building(PPB), Kick Motor Building(KMB). The purpose of AC is accepting of KSLV-I components, testing, checkout, assembly(disassembly) of the launch vehicle(LV), readiness for transferring LV to LC, accepting of integrated Launch Vehicle(ILV) in case of launch cancellation and short/long time storage, and so on. Qualification tests(QT) for the total system at AC are carried out to check hardware used for operations with first stage unit mockup, upper stage unit Mockup and integrated mockup(GTV). The qualification tests is carried out according to program and procedures of QT. By course of this process, AC is certificated that all the systems and facilities of AC are guaranteed by the fulfillment of technological operations envisioned in the program of qualification tests during the work with the mock-up.

[VI-3-5] 시간영역 유한차분법을 이용한 안테나 간섭영향 해석

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소형우주발사체 KSLV-I의 상단부 전자장비 탑재 구조체의 외부면에는 텔레메트리, 원격추적, GPS, 비행종단 시스템의 안테나가 두 개 또는 세 개씩 장착된다. 발사체의 표면에 안테나를 부착할 수 있는 위치는 제한되어 있기 때문에 각 안테나 들은 서로 인접되어 부착된다. 또한 상단부 전자장비들과 지상장비의 성능을 검증하기 위해 수행되는 경비행기를 이용한 비행시험은 각 안테나들이 더욱 근접하여 장착된 상태로 수행된다. 따라서 각 하부시스템의 안테나 사이에 발생하는 간섭현상을 분석하기 위한 연구가 요구된다. 이 논문에서는 시간영역 유한차분법을 이용하여 서로 다른 하부시스템의 안테나 간에 발생하는 간섭영향을 해석하였다. 수행된 해석 과정은 우주발사체의 안테나 방사패턴을 해석하는데 이용될 수 있으며, 향후 우주발사체의 시스템 설계 과정에서 안테나의 배치 방법과 각 하부시스템의 성능 요구조건을 결정하는데 효과적으로 사용될 수 있다.

■ Session : 탑재체 III
10월 30일(금) 17:15 - 19:00 제3발표장

[VII-3-1] Sequential detection simulation of red-tide evolution for geostationary ocean color instrument with realistic optical characteristics

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Geostationary Ocean Colour Imager (GOCI) is the first ocean color instrument that will be operating in a geostationary orbit from 2010. GOCI will provide the crucial information of ocean environment around the Korean peninsula in high spatial and temporal resolutions at eight visible bands. We report an on-going development of imaging and radiometric performance prediction model for GOCI with realistic data for reflectance, transmittance, absorption, wave-front error and scattering properties for its optical elements. For performance simulation, Monte Carlo based ray tracing technique was used along the optical path starting from the Sun to the final detector plane for a fixed solar zenith angle. This was then followed by simulation of red-tide evolution detection and their radiance estimation, following the in-orbit operational sequence. The simulation results proves the GOCI flight model is capable of detecting both image and radiance originated from the key ocean phenomena including red tide. The model details and computational process are discussed with implications to other earth observation instruments.

[VII-3-2] In-orbit Stray light Performance Simulation for Geostationary Ocean Color Imagers

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