EARTH OBSERVATION SYMPOSIUM (B1)
International Cooperation in Earth Observation Missions (1)

Author: Mr. Robert LeRoy
Lockheed Martin (Space Systems Company), United States

AFFORDABLE LANDSAT SOLUTIONS LEADING TO IMPROVED REVISIT TIMES

Abstract

The importance of Landsat data within the United States and the international community is recognized by the growing number of users and the addition of similar systems either on orbit or planned (PROBA V, Sentinel 2). With the recent success of Landsat 8 the improvement in radiometric and optical performance meets or exceeds user needs. Now, the most requested improvement is for more Landsat quality data by reducing revisit times from 8-16 days to 4 days or less. With performance and size improvements seen today and trending for the future in detectors and focal plane manufacturing, mission affordability is becoming a reality. Smaller instruments can be designed leading to smaller spacecraft and launch vehicles which result in lower mission costs. Ride share concepts can also be considered further reducing launch costs as demonstrated by the PROBA V mission. More affordable missions could lead to solutions that address the request for improved revisit times. This paper will describe a full spectrum system (visible to thermal)meeting current Landsat data performance requirements taking advantage of these advances that can be built in today's time-frame. Data quality, instrument designs, spacecraft configurations, mission concepts, data processing algorithms and cost comparisons will be delineated. Concepts for business models with international collaboration will be presented.