

15th SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Small Earth Observation Missions (4)

Author: Dr. Enrico Stoll
RapidEye AG, Germany, stoll@rapideye.de

THE RAPIDEYE SATELLITE CONSTELLATION AND ITS DATA SERVICES

Abstract

RapidEye is a commercial remote sensing mission delivering geospatial information to various customers in the agricultural market. Five identical satellites in a sun-synchronous orbit image more than four million square kilometers per day. RapidEye features the unique ability of daily revisiting any area on earth. Within its two years of operation, the constellation mastered a number of complex challenges, which led to an evolved mission concept. RapidEye started commercial operations in February 2009 and utilizes its own a dedicated spacecraft control center and a full ground segment designed to plan, acquire and process several millions of square kilometers of imagery every day. In order to keep up with evolving market demands, RapidEye has continually worked at evolving the mission concept beyond its original vision and capabilities, extending the mission concept to include data sales, emergency response, and direct downlink capabilities. That way RapidEye can reliably and predictably supply to customers the most current, cost-effective and high quality information about features on the Earth's surface. This paper describes the challenges that have to be met for adapting to an evolving geospatial information market. It shows the possibilities and limitations of the the satellite constellation and the engineering efforts that have to be undertaken to provide a highly reliable data service.