

SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (2)

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SAFIY: FEATURE EXTRACTION USING HIGH RESOLUTION SATELLITE IMAGERY FOR THE
UNITED ARAB EMIRATES

Abstract

Over the past decades, the United Arab Emirates has experienced rapid growth in both development and population. Hence, there has been a necessity to constantly monitor these fast paced changes. As technology is evolving day by day, there is a possibility to monitor changes that are happening on different areas in the world using satellite imagery. The data from these imageries can be utilized to identify and extract different features, such as water areas, vegetation areas, and roads, which will aid the municipal planning and management, and environment authorities. Through this, analysts can monitor road constructions, water resources, and vegetation growth in various areas and analyze these changes. These features are detected and extracted through SAFIY (i.e. the Smart Application for Feature extraction and 3D modeling using high resolution satellite Imagery) by using high-resolution satellite imagery from DubaiSat-2 and Deimos-2 (0.75m resolution), and WorldView-3 (0.3m resolution) satellites. SAFIY is a joint collaboration between Mohammed Bin Rashid Space Centre (MBRSC), Deimos Space UK, and Ordnance Survey International (OSI). It uses image-processing algorithms and classification methods to extract different features (roads, water, and vegetation) to generate vector maps data. In addition, SAFIY is able to detect different vegetation types, specifically palm trees and mangroves. These detected features will be extracted as vector data in SAFIY and can be updated and edited by end-users, such as governmental entities and municipalities.