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Author: Mr. Angelo Espinoza Valles
Samara National Research University (Samara University), Russian Federation, esalvator24@gmail.com

Mr. Victor Romero-Alva
Image Processing Research Laboratory (INTI-Lab). Universidad de Ciencias y Humanidades - UCH, Peru,
nielsrom93@gmail.com

PROPOSAL OF AN INTEGRATED REMOTE SENSING SYSTEM FOR DETECTION OF DRUG
TRAFFICKING ORGANIZATIONS OPERATIONS IN LATIN AMERICA

Abstract

For years, drug trafficking activities have grown exponentially and dispersed worldwide despite the innumerable countermeasures taken by governments. Mostly, this is reflected in the fact that they have reached an important position not only in socio-cultural, economic and political spheres but also in the territories and infrastructure of the major drug-producing and drug-transit countries in Latin America by settling in remote and rural areas. This is denoted not only in the emergence of drug crops in places of difficult access, such as dense jungles in the Amazon region of Brazil, Colombia, Peru and Venezuela, but also in the construction of illegal airstrips for international drug transportation. Furthermore, related illegal operations of drug traffickers can be observed in shipping routes used by small boats and vessels from countries with free access to the sea. Remote sensing together with machine learning technologies have become widely used for detecting and identifying physical characteristics of specific areas of the Earth. However, at this moment similar approaches and technologies are mainly used in developed countries for other applications. In this sense, in order to constantly keep track of drug-related illicit activities on a global basis, it is necessary to provide technological tools, infrastructure, and means to Latin American governments. Thus, the main aim of this work is to present an integrated remote sensing system as an overall strategy to monitor and detect the different types of illegal drug trafficking operations, and to analyze the socioeconomic impact of its implementation in the Latin American region. This system would make possible to map the points of production and subsequent shipment of illicit substances in the Andean-Amazon region, as well as the sea lanes on the Latin American coasts. The main algorithm and features of the approach are outlined. This proposal would contribute to developing countries in the fight against drug trafficking and organized crime, and over time would provide economic and social benefits to remote communities.