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

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CUAIMA: AN INTELLIGENT AUTONOMOUS UNIVERSAL BOX FOR ARTIFICIAL MONITORING

Abstract

The objective of the present project is to conceptualize and develop a prototype of an automated box for the purpose of biological research and monitoring. This self-contained unit, which will have minimal environmental impact, will be designed to be deployed in a variety of environments, including remote and inaccessible areas. The unit will be equipped with an array of sensors and data sources, including high-resolution imagers for flora and fauna surveys, audio recorders for soundscape analysis and animal vocalization detection, video cameras for behavioral observation, environmental sensors for temperature, humidity, and water quality monitoring, and Internet of Things (IoT) devices specialized in biology, such as GPS collars and bio-loggers. The incorporation of Artificial Intelligence (AI) within the in situ analysis of this data will facilitate automated species identification, tracking of movement patterns, detection of changes in biodiversity, and assessment of environmental health.The transmission of processed information (or raw data) will be facilitated via satellite, ensuring connectivity from any location. The central objective of this initiative is to create an advanced tool to enable biological research, habitat management, and species conservation, based on Sustainable Development Goals (SDG) 15 "Life of terrestrial ecosystems".