RES-NRSC-2022-009

Name of ISRO Centre/Unit

National Remote Sensing Centre, Hyderabad

Title of the research proposal

Urban Object Detection using UAV Remote Sensing.

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Area of Research
Remote Sensing Application for Urban Infrastructure Assessment

Summary of the proposed research and expected deliverables

In an Urban environment Urban Objects like Roads, Trees, Foot paths, Buildings, Man holes, Street lights, Water supply vents etc play a vital role in urban planning. Information about these urban objects in terms of locations, usability, capacity and monitoring is need of the hour for policymakers, administrators and impacts their planning decisions.

Existing approaches for urban objects detection rely on manual feature extraction procedures using data from various platforms like aircrafts, satellites, UAV/Drones etc. Automatic Object detection is a challenging problem in the field of remote sensing (aerial/UAV and satellite image analysis) and requires approaches related to knowledge based, Object based, Machine Learning based methods
/ techniques to achieve the required goal. The current study aims to explore UAV data and develop Techniques/ algorithm along with a methodology for detection of urban Objects.

Scope of the Work:

➤ Develop Techniques/ algorithms along with a methodology for detection of urban Objects from UAV data.

➤ Applications related to Urban infrastructure planning and monitoring, illegal constructions,

Green spaces/ trees, impervious surfaces and slum management require a location-based inventory.

Deliverables:

➢ Detailed Methodology.

➢ Algorithms/Techniques.

➢ Inventory of location based Urban Objects.