

PREFACE

Welcome to this report on “UAV Based Photogrammetric Mapping and 3d Modelling of Urban Building”.

This report aims to process the high-resolution data and preparing the high-quality map like ortho, DTM & DSM. Then we can extract each of the building height and making the 3D model to visualize the buildings properly. The motivation behind this study is the significant shift in mapping technologies brought about by UAVs, which have revolutionized the field of geospatial data collection. Traditional methods, such as manned aerial surveys and terrestrial laser scanning, although effective, are often time-consuming and costly. UAV technology offers a promising alternative, providing rapid, accurate, and cost-effective solutions for urban mapping. This study explores the process of UAV-based photogrammetry, from the mission planning stage to the generation of detailed 3D models and orthophoto maps. The use of high-resolution cameras and GPS-equipped UAVs facilitates the capture of overlapping aerial images, which are then processed using advanced software to produce highly accurate 3D models. Then we can also assess the accuracy of GCPs, how much accurate each of GCPs are in the ground level.

The main location for this study was Yelamanchili, an Andhra Pradesh town that is rising quickly. The town offers a diverse range of building designs and urban configurations, which makes it a perfect choice for testing the performance of UAV-based photogrammetric methods. This project involves several steps, including careful mission planning, the use of UAVs fitted with GPS units and high-resolution cameras, and the use of advanced photogrammetry software to process the collected photos. The use of Ground Control Points (GCPs) is an essential factor in improving the produced models' positional accuracy.

For these models to be accurate in terms of location, Ground Control Points (GCPs) must be included. To provide architects, engineers, urban planners, and other stakeholders participating in urban development projects with valuable insights, this research intends to highlight the advantages, difficulties, and possible uses of UAV-based photogrammetric mapping. The results of this study should support further efforts to improve environmental monitoring, infrastructure development, and urban planning using cutting-edge geospatial technology.

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