RUTGERS
Center for Advanced Infrastructure and Transportation

PROJECT OVERVIEW REPORT

1. UTC Identifying Number
   69A3551847102

2. Center Identifying Number
   CAIT-UTC-REG32

3. Project Title
   Rotorcraft Landing Sites – An AI-Based Identification System

4. Principal Investigator & Contact Information
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   Rotorcraft, Unmanned Aircraft Systems (UAS), and eVTOL/Urban Air Mobility
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7. Project Description
   The updated information about the location and type of landing sites is an essential asset for the Federal Aviation Administration (FAA) and the Department of Transportation (DOT). However, the acquisition, verification, and regular updating of information about landing sites is not an easy or straightforward task, and the lack of current and correct information on helicopter landing sites is a risk factor in several accidents and incidents involving rotorcraft. The primary goal of this proposal is to create an AI-based system for the identification of helipads, heliports, and landing site infrastructure from various heterogeneous datasets, including video from rotorcraft, drones, satellite images, or aerial imagery, as well as textual data sources (i.e., data entered by helipad owners/operators or pilots) from other sources.

8. Implementation of Research Outcomes (or why not implemented)
   The intended outcome of the project is to generate an AI algorithm that will automate the process of identification of landing sites from video data as well as

satellite images. The researchers hope to achieve landing site identification accuracy equal to or higher than that of a trained human operator at a fraction of time and resources. Once developed, the AI system would allow FAA to update its databases of landing sites regularly without any delays so the information could be used by any mission, including “Helicopter Air Ambulance missions to rural communities.”

9. Impacts/Benefits of Implementation (actual, not anticipated)
   To Be Determined

10. Dates and Budget
    Start date: 1/1/2020
    End date: 12/31/2020
    UTC (CAIT) Dollars: $80,000
    Cost Sharing: $80,000
    Total Dollars: $160,000
11. Keywords
    heliport, aircraft, neural networks, machine learning, artificial intelligence, detection, computer vision

12. Web Links (Reports and Project Website)
    https://cait.rutgers.edu/research/rotorcraft-landing-sites-an-ai-based-identification-system/