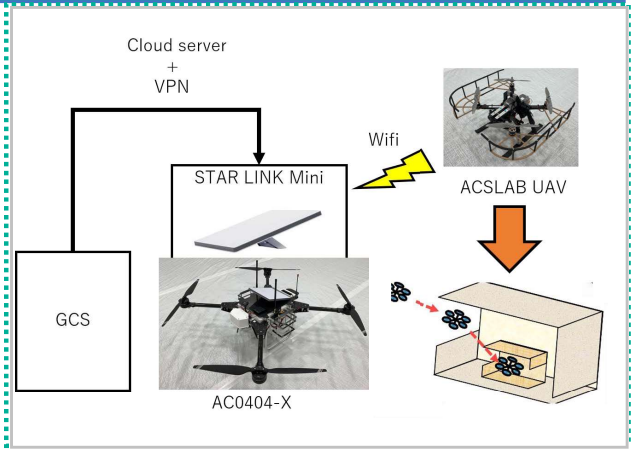
Harsh Environment Drone	Challenge	ICAST	Japan, Chiba

Key Development Points

In Mission 1, we utilize a system that generates an optimal trajectory for orthorectification by inputting flight altitude, speed, and the overlap rate of captured images. In Mission 2, we recognize ground markings using edge AI-based automatic character recognition and safely drop necessary supplies using a centrifugal clutch-type drop device. Mission 3 guides the parent drone to the mission area via wireless relay of telemetry and imagery, then controls the child drone entering the building using the Starlink communication system mounted on the parent drone.



Team Introduction

Based on the results of past joint research conducted between universities and companies, we formed a team with the goal of developing robust wireless systems and drone systems capable of withstanding harsh disaster response conditions.

This competition utilizes a domestic wireless communication system that does not rely on LTE communications, and we plan to refine the resulting technology for practical use in actual disaster response missions.

Role	Name	Affiliation/Position	Areas of expertise, research fields
Team leader	Satoshi Suzuki	Chiba University Graduate School of Engineering / Associate Professor	Research on Intelligent and Autonomous Control of Drones

Contact Information Chiba University Graduate School of Engineering Mechanical Engineering Course Autonomous Control Systems Laboratory

Websites, etc. https://www.em.eng.chiba-u.jp/~acslab/