In-house Monthly Training for Disaster Response Mapping

Setting up AEROBOWING(AS-VT01)

Japan Flying Labs leader lecturing about AS-VT01

Calibration

OVERVIEW	
Flying Labs	Japan Flying Labs (JFL)
Location	Eastern Japan: Sagamihara city, Kanagawa, Japan Western Japan: Kaizuka city, Osaka, Japan
Date	Eastern Japan: The second Friday of every month Western Japan: No fixed date but occurs monthly
Length (number of days)	This is not a one-off training but a monthly training

Sector program (optional)	[AidRobotics](#)
Format	In-Person and online
Co-organizer if applicable	CrisisMappers Japan's DRONEBIRD project
SDGs	[GOAL 5: Gender Equality](#) [GOAL 11: Sustainable Cities and Communities](#) [GOAL 13: Climate Action](#)

SCOPE & OUTCOMES	
Type of training	Technical training of professionals (Flying drones to get aerial imageries for disaster response mapping)
Goal of the training	1. Perform smooth flight operations both manually and using autopilot. 2. Develop drone data acquisition skills. 3. Develop drone data analysis skills (participants who cannot come to the training site in person can work remotely from home to process aerial images). 4. Develop data literacy and interaction skills.
Expected outcome for participants	Participants are expected to fly their own multicopters, fixed-wing drones, or VTOL to get aerial images of the disaster-affected area within 2 hours after the disaster (in case of a big earthquake). They are also expected to process the aerial images as soon as possible to share for humanitarian mapping.
Confirmed outcome after training	Participants brush up their drone operation skills and update their software and apps through the regular training. The first VTOL AEROBO WING (AS-VT01) was launched in 2021. We increased the number of people who understand and operate it as a team, thus accumulating operational experience
Eventual next steps	● Holding a bootcamp to get knowledge and skills to operate fixed-wing drones. ● Drone flight training at different locations. ● More training to process aerial images, analyze data, and share it for publishing

PARTICIPANTS	
Profiles and number of participants	Depending on the month, attendees' number and category vary. Here is an average: 1. About 10 full and associate members of DRONEBIRD 2. 2-3 university students 3. 2-3 visitors interested in the project
Name of participants' organizations	● DRONEBIRD ● Aoyama Gakuin University
Gender representation	Male - 80-90 percent Female - 10-20 percent
Who paid for the training?	Free for students Non-DRONEBIRD members pay a participation fee. (DRONEBIRD members pay an annual membership fee to Crisis Mapper Japan not only for the training but also to keep projects.)
Participant fee rate (if applicable)	Free of charge
Scholarships offered?	No

CONTENT	
Training components	1. Flying a drone (multicopter, fixed-wing, VTOL) by autopilot to get aerial images 2. Processing the aerial images (orthomosaic, 3Dmesh, point clouds) 3. Publishing the acquired data to the public

Training resources used	**Hardware:**
	    ● Drones owned by participants
	    ● Fixed-wing or VTOL owned by JFL
	    ● PC/tablet/smartphones owned by participants
	
	Software: Mainly free software, or participants buy software for their processing.
	Apps and platforms:
	    ● Zello, Messenger
	    ● PIX4Dcapture

	● DroneDeploy ● DJI pro ● e-Motion ● PIX4Dreact ● PIX4Dcloud ● Metashape ● OpenDroneMap ● OpenAerialMap ● Hinata GIS ● OpenStreetMap ● GitHub ● Google Drive
Approaches and methods used	All participants are involved in flying drones individually or in a group.