

## In-house Monthly Training for Disaster Response Mapping



*Setting up AEROBOWING(AS-VT01)*



*Japan Flying Labs leader lecturing about AS-VT01*



*Calibration*

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

<b>Sector program (optional)</b>	<a href="#">AidRobotics</a>
<b>Format</b>	In-Person and online
<b>Co-organizer if applicable</b>	CrisisMappers Japan's DRONEBIRD project
<b>SDGs</b>	<a href="#">GOAL 5: Gender Equality</a> <a href="#">GOAL 11: Sustainable Cities and Communities</a> <a href="#">GOAL 13: Climate Action</a>

SCOPE & OUTCOMES	
<b>Type of training</b>	Technical training of professionals (Flying drones to get aerial imageries for disaster response mapping)
<b>Goal of the training</b>	<ol style="list-style-type: none"> <li>1. Perform smooth flight operations both manually and using autopilot.</li> <li>2. Develop drone data acquisition skills.</li> <li>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).</li> <li>4. Develop data literacy and interaction skills.</li> </ol>
<b>Expected outcome for participants</b>	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.
<b>Confirmed outcome after training</b>	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
<b>Eventual next steps</b>	<ul style="list-style-type: none"> <li>● Holding a bootcamp to get knowledge and skills to operate fixed-wing drones.</li> <li>● Drone flight training at different locations.</li> <li>● More training to process aerial images, analyze data, and share it for publishing</li> </ul>

PARTICIPANTS	
<b>Profiles and number of participants</b>	Depending on the month, attendees' number and category vary. Here is an average: <ol style="list-style-type: none"> <li>1. About 10 full and associate members of DRONEBIRD</li> <li>2. 2-3 university students</li> <li>3. 2-3 visitors interested in the project</li> </ol>
<b>Name of participants' organizations</b>	<ul style="list-style-type: none"> <li>● DRONEBIRD</li> <li>● Aoyama Gakuin University</li> </ul>
<b>Gender representation</b>	Male - 80-90 percent Female - 10-20 percent
<b>Who paid for the training?</b>	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.)
<b>Participant fee rate (if applicable)</b>	Free of charge
<b>Scholarships offered?</b>	No

CONTENT	
<b>Training components</b>	<ol style="list-style-type: none"> <li>1. Flying a drone (multicopter, fixed-wing, VTOL) by autopilot to get aerial images</li> <li>2. Processing the aerial images (orthomosaic, 3Dmesh, point clouds)</li> <li>3. Publishing the acquired data to the public</li> </ol>
<b>Training resources used</b>	<p><b>Hardware:</b></p> <ul style="list-style-type: none"> <li>● Drones owned by participants</li> <li>● Fixed-wing or VTOL owned by JFL</li> <li>● PC/tablet/smartphones owned by participants</li> </ul> <p><b>Software:</b> Mainly free software, or participants buy software for their processing.</p> <p><b>Apps and platforms:</b></p> <ul style="list-style-type: none"> <li>● Zello, Messenger</li> <li>● PIX4Dcapture</li> </ul>

	<ul style="list-style-type: none"> <li>● DroneDeploy</li> <li>● DJI pro</li> <li>● e-Motion</li> <li>● PIX4Dreact</li> <li>● PIX4Dcloud</li> <li>● Metashape</li> <li>● OpenDroneMap</li> <li>● OpenAerialMap</li> <li>● Hinata GIS</li> <li>● OpenStreetMap</li> <li>● GitHub</li> <li>● Google Drive</li> </ul>
<p><b>Approaches and methods used</b></p>	<p>All participants are involved in flying drones individually or in a group.</p>