# Safety Advisory Note on Drone Selection

Drones are becoming increasingly available around the world. Many of these drones are very well designed and manufactured. They are safe and highly reliable. Others, however, are less so. In the past 12 months, Flying Labs in Africa and other regions have noticed an uptick in the number of new drone companies offering highly affordable drones that boast impressive features. Some of these companies are making grandiose claims to governments, nonprofits and other prospective clients. While Flying Labs are finding some of these claims to be false, the labs are far more alarmed by how unsafe some of these drones appear to be. This is true for both mapping and cargo drones. The purpose of this Advisory Note is not to promote specific drone companies at the expense of others, nor is it to promote foreign companies at the expense of local companies. Instead, the purpose of this Note is to enable Flying Labs, their partners and the broader community to make more informed decisions when selecting which drones to use and which drone companies to work with.

Any drone crash, of any drone, by anyone, poses a safety risk. In addition, drone crashes pose a reputational risk to all organizations working with drones. As such, this Advisory Note is intended to serve as a guide to help select drone technology that is more reliable and safer. We don't have all the answers, however. As such, we actively welcome feedback on how to improve the guidelines listed below. To do so, simply add your suggestions by inserting comments where relevant. WeRobotics and Flying Labs are not responsible for any adverse outcomes that result from following these suggested guidelines.

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### Evaluating a Drone Company

Any drone technology must first be evaluated by evaluating the company that manufactures and sells the drone in question.

- When was the company founded? The more recent the founding, the less of a track-record the company will have.

- Does this company publicly list which organizations/clients it has worked with? If so, contact those organizations/clients and ask for their opinion of the company in question.

- If the company does not make this list public, ask the company to provide you with a list. As a prospective client, you are entitled to this information. When you receive the list, contact the organizations/clients on this list to ask for their opinion of the company.

- Who are the co-founders? Do they have a strong track-record prior to founding the company? Check their LinkedIn profiles and social media activity. Are they linked to anyone you might already know? If so, contact that person and ask for their opinion of the co-founders.

- Even if co-founders have a strong record prior to founding their company, this does not mean that the new technology they're developing is safe or reliable. As if you can participate in a live demo via video chat so you can see the full drone operation from start to end. Be sure to ask for a live test of the drone's safety mechanism during the video chat?

- How many employees does the company have? The smaller the number, the less the capacity they may have to produce a drone that meets the specifications they advertise.

- What kind of technical support does the company provide if you purchase one or more of their drones? Will they replace the drone if it has a problem/defect? Ask to see their written policies on returns and warranties.

**Evaluating a Drone Technology**

- When did the drone become commercially available? Is the drone the first model or version they have manufactured? The more recent the drone, the less evidence there is that the drone is reliable and works as advertised.

- Search YouTube and other social media channels for users of the drone (not the manufacturer) posting about the drone in question. Consider contacting them for or other third parties for an independent evaluation of the drone's performance. Are there videos of the drone crashing on YouTube, Facebook, Twitter, etc.?

- Does the drone have multiple safety mechanisms? What is the drone's failsafe behaviours? What happens when it loses contact with the operator? Have the failsafes been tested? If it has a parachute, has the parachute been tested?

- What is the risk in operating the drone? If it is less than 250g, there's very little risk even if operated near people. If it is 2kg or less and only flown in places where there are absolutely no people around, that's also low risk. If the same 2kg drone is to be operated anywhere near people it needs a much higher reliability. A drone above 5kg operated above people needs to be extremely well tested and reliable.

- Does the drone comply with local drone and radio laws? For example, some drones are sold with 900MHz radio links which are legal in the US and other countries, however this frequency interferes with the mobile phone networks in other countries (such as in Europe or Africa, which only allow 868MHz radio links). To find out which frequencies are allowed for radio links, many countries are listed here. Other countries can be found by googling or contacting local radio authorities. 2.4GHz communication is generally legal wherever WiFi is allowed.

- Does the drone company have checklists for their drone (e.g., safety check-lists, pre-flight check-lists, trouble-shooting check-lists)? If so, ask for copies. Are these checklists detailed?

- Are you able to get a demo of the mission planner software and ideally of the drone flying? Local providers that do not or cannot give you a demonstration should be avoided

- Inquire about repairs. Does the drone need to be shipped back? can it be repaired on site? If so is a training required? How quickly can spare part be shipped and do they keep an inventory of the parts most likely to fail.