STANDARD PHOTOGRAMMETRY SOFTWARES

Pix4Dreact

This is the mapping package developed specifically with the needs and unique challenges of first responders in mind. It offers the unparalleled advantage of quick turn-around times, with the ability to turn aerial images into 2D orthomosaic maps in a matter of minutes. And the lightweight software can do all of the image processing on a mid-range computer, without the need for an Internet connection for cloud processing

Pix4Dreact Turnaround Time

One of the biggest advantages of Pix4Dreact is the fast turnaround time. The entire process, from the time of launching a drone, to having a finished map in hand can be accomplished in less than half an hour.

Pix4Dreact Compatible Aircraft and Sensors

Pix4Dreact software is compatible with a wide range of image sources and UAS aircraft, being limited, however, to primarily RGB imagery.

Pix4Dreact Limitations

Intended to create maps as quickly as possible, the finished maps are not the same quality as those produced by more advanced mapping software programs. Maps are 2D only, not intended to provide the survey-grade, volume-measuring capabilities of a 3D map. They offer accurate, reliable, and measurable information on landscapes and terrain, but lack the finesse and ultra-sharp high-definition image quality that you would get from a map produced through Pix4Dmapper.

Mapper vs. React

Pix4Dmapper is a much more sophisticated mapping software program than Pix4Dreact. It is capable of producing higher quality, and more versatile maps. For example, Pix4Dmapper has the ability to produce maps from almost any type of sensor, including RGB, thermal or multispectral, whereas Pix4Dreact is optimized for use with RGB cameras.

Pix4Dmapper Compatible Aircraft and Sensors

Pix4Dmapper offers the added advantage of having an even broader range of compatibility than that of Pix4Dreact. All of the aircraft and sensors that are compatible with Pix4Dreact (listed above) are also compatible with Pix4Dmapper (with the single caveat that images from the Mavic 2 Enterprise Dual, while compatible, are not recommended). Expanding on that list however, thermal and multispectral images can be processed with Pix4Dmapper.

DroneDeploy

How does it work?

DroneDeploy has several different platforms to address three layers of the aerial map-making process.

- Flight Planning
  The first layer is data collection, and the DroneDeploy solution is their Flight App (for Android or iOS), which allows you to plan data collection missions, automate flights, thereby saving time and increasing efficiency. The intelligent flight planning program makes it easy to plan and execute complex flight plans with just a few taps, and automate the entire flight (including take-

off and landing) getting you in the air and back again in less time. Your customized flight plan can also be shared with your entire team to improve consistency and reliability of data captured. From the DroneDeploy Flight App, you can easily capture any type of drone media, including photos, videos, and panoramas.

- Another unique feature of the Flight App is its ability to create real-time Live Maps, allowing you to make assessments based on the data gathered, even while your drone is still in the air, no SD or internet connection required.

- Drone Data Processing
  Once you have drone data in hand, whether gathered with the aid of DroneDeploy's Flight App, or another flight planning program, images can easily be uploaded to the DroneDeploy data processing platform to generate precise 2D maps, 3D models, 360 panoramas, and more. Data upload of up to 10,000 images is fast and simple, and doesn't require any specialized hardware or software, just upload and go.

- With DroneDeploy it's easy to achieve survey-grade results through use of built-in support for ground control points and RTK GPS technology. Nearly any type of drone imagery can be processed as well, including thermal and multi-spectral. You can also store your uploaded images with DroneDeploy for easy access to them at a later date.

- Data Analysis
  The third layer of drone mapping is the analysis of data and maps, after the processing is accomplished. DroneDeploy offers a solution for this as well, with a place to store and study your data, collaborate with team members, and perform measurements and create reports. Measurement and analysis are simplified through automated insights to do tasks such as detect and count objects or measure stockpile volumes.

Applications

The DroneDeploy mapping software is a good fit for a range of industrial applications, including mining and quarries, construction and surveying, agriculture, utilities and solar array inspections, roofing inspections, oil and gas, and other professional applications.

DroneDeploy LiveMap vs Pix4Dreact?

DroneDeploy has a Live Map feature, that can give instant, real-time insights even while the drone is still in flight. Through testing the live map, we found that the software will sometimes glitch out and the map would not be completed. Pix4Dreact is a much more robust application. The post-processing on the computer after the flight has been conducted makes the mapping process much more reliable. Having the drone fly, take pictures, and map all in the same flight oftentimes causes the Drone Deploy LiveMap to get overloaded and the live map stops processing. To get a high-quality map from Drone Deploy it requires an internet connection to the cloud for the images on the drone to process. This process has a long turnaround time. For Pix4Dreact quick mapping is easy as the images from the drone can be quickly downloaded into the Pix4dreact software and the stitching of the map can begin. This streamlined process produces accurate maps as quickly as possible for emergency situations all without an internet connection.

DJI Terra vs. DroneDeploy vs. Pix4D

DJI Terra is a solid mapping program that offers similar types of outputs to those of DroneDeploy and Pix4Dmapper, including real-time 2D mapping for instant readability of mapping data in remote areas, or in instances where fast decision making is crucial. Other similar products include 2D orthomosaics and multispectral reconstructions, and 3D point-cloud models and reconstructions.

Where DJI Terra falls short of DroneDeploy or Pix4Dmapper is in the overall accuracy and high-quality resolution of the finished maps and models. While use of ground control points can improve the absolute accuracy of maps and models, DJI Terra does not advertise the ability to produce survey-grade results. And while both DroneDeploy and Pix4Dmapper are able to make use of images from a wide variety of sources to produce ultra-high resolution, high-accuracy 3D maps and models, DJI Terra is much more limited in image source compatibility.

While the real-time 2D mapping offered by both DJI Terra and DroneDeploy are potentially useful in emergency or first response situations, they lack the flexibility and shareability of the unique offering of non-cloud based, fast-mapping from Pix4Dreact.