

Intellectual Property Fall 2018 Writing Assignment

This assignment is 3 pages long. You can confine your answer to the areas we've discussed so far in class: undeveloped ideas, trade secret, patent, and copyright. You are allowed to consult written and electronic sources beyond those presented in class and in the coursepack (including those linked in the problem), but if you find anything that contradicts this problem, treat the problem as authoritative. Do not discuss this assignment with anyone until after the due date.

Your client, ThunderDrone, has used unmanned aerial vehicles (i.e. "drones") since December 2017 to do mapping and visualization for the real-estate industry. It buys off-the-shelf consumer drones (e.g. the [DJI Phantom Pro](#)), to which it attaches off-the-shelf [inertial measurement units](#) (IMUs), [GPS receivers](#), and [lidar units](#). The result is that the drone records extremely high-resolution two- and three-dimensional pictures of an area while also having highly accurate information about its position in the air. Once the drone has landed and the data it captured has been downloaded, ThunderDrone applies some image-reconstruction algorithms that its chief research scientist, Annie N. T. Turner, developed for her Ph.D. thesis and published in two peer-reviewed journals. It is then able to produce a high-resolution 3D model of the site. This model can be combined with computer-generated images of a proposed building to produce photorealistic images from any angle and interactive flythroughs of the completed project. In addition to drone data, ThunderDrone uses high-resolution maps from the [United States Geological Survey](#) as part of its inputs.

Drones aren't new. Neither are IMUs, GPS, or lidar. All three of them have been put on drones, but never, so far as you know, all three at once. Another real-estate-drone startup, SiteMaster, uses drones with GPS and lidar, but without IMUs. It produces noticeably lower-quality images (trees, in particular, look wrong because the lidar's depth maps are off). It is well-known that adding an IMU to a GPS enables the GPS to achieve much better accuracy, but this approach has been used, so far as you know, only for enabling pinpoint aerial drone operations (e.g. docking) rather than to improve imaging quality.

Since August 2017, ThunderDrone has been describing its technology in a pitch deck that it shows to investors. These meetings are invitation-only and under NDA. The use of IMUs is not publicly mentioned on ThunderDrone's website. You have heard unconfirmed rumors that yet another startup, MaxView, has been pitching investors on the drone+IMU+GPS+lidar combination for applications in the security/military space since March 2018. You believe that MaxView may be engaged in testing but that it has not yet started seeking customers.

ThunderDrone never gives clients possession of its drones. Instead, a ThunderDrone employee transports the drone to the site, meets a client representative there, and operates the drone to ensure that it captures all information needed for the client's project. (You have reason to believe that some of ThunderDrone's employees have allowed clients to operate the drone, in violation of [FAA rules](#) which permit only licensed operators to pilot drones.) The employee then brings the drone back to ThunderDrone's headquarters for data download and processing. Clients receive the processed 3D image file, which can be used with rendering software to produce the images and flythroughs they require. For additional fees, ThunderDrone offers consulting services, in which its employees do the rendering themselves using architectural plans provided by the client.

Write a memo to your client of about 2500 words explaining the intellectual property (IP) considerations that should inform ThunderDrone's strategy going forward. Describe the types of IP protection ThunderDrone should plan to rely on, what will be necessary to secure those protections, and the risks that those protections will and will not be able to guard against. Tell ThunderDrone if there is anything it should do, not do, or do differently for IP reasons. Remember that your client's officers do not have law degrees and are not familiar with IP law. They are also very smart and exceedingly busy. It is fine to tell them you will provide them with appropriate legal instruments – patent applications, NDAs, etc. – without going into the details as long as you identify the strategic choices they involve and the reasons for your recommendations.

Your answers are due by noon on Wednesday, October 31. Please submit your answers by emailing a PDF to Angy Altamirano (aaltamirano@cor-

nell.edu). The PDF should not contain your name or any other identifying information. She will anonymize the files for my grading.