**Project ideas**

The project idea of our group is a transport drone. At present, people's lives are very convenient because they do not need to go out for dinner and shopping. It only need to move their fingers on the mobile phone. All this is inseparable from the courier. However, Transport drones can better replace couriers to complete the job.

The transport drone uses an eight-rotor aircraft equipped with a GPS auto-control navigation system, an GPS receiver, various sensors, and a wireless signal transmitter and receiver. The UAV has various flight modes such as GPS auto-navigation, fixed-point suspension, and manual control. The transport drones can carry packages through unmanned low-altitude aircraft operated by radio remote controls and self-contained program control devices. It can also be automatically delivered to the destination. Transport drones can save a lot of human resources for transportation. Furthermore, Transport drones have higher distribution efficiency than humans. Because drones can fly straight in the air, it does not need to consider the shortest distance to the destination or traffic jams and even get lost. Transport drones can solve distribution problems in remote areas. Remote areas like roads are not built or even in the mountains. Drones can replace couriers to complete delivery mission. Transport drones can improve distribution efficiency and reduce labour costs in this situation. The drone also has a loss of control protection function. When the drone enters an out of control state, it will automatically maintain accurate hovering and search for empty lands in the vicinity to wait for collection. UAVs transmit data through 4G networks and radio communication remote sensing technologies and dispatch centres and self-service courier cabinets, send their own geographical coordinates and status information to the dispatch centre in real time, receive instructions from the dispatch centre, and receive the destination coordinates. Later, it will use the GPS autonomous navigation mode to fly. After entering the target area, it sends a landing request, a local mission report, and a local operating status report to the destination courier. After receiving the landing request response, the courier guides the drone in the express cabinet. Top landing platform landing, loading and unloading courier, and rapid charging. The drone will fly to the express delivery distribution point after losing contact with the dispatch centre or experiencing an abnormal failure. Moreover, the position of the drone is connected to the recipient's mobile phone, and the recipient can check the position of the drone at any time. When the weather changes abruptly, the drone has a sensor that senses it and will return home quickly to wait for the next instruction. This prevents accidents happening. Transport drones also have many disadvantages and uncertainties. One of the downsides of transport drones is that drones cannot be delivered in bad weather. The rain in some places all the year round will seriously affect the delivery efficiency of drones. Furthermore, Transport drones are vulnerable to vandalism. If human damage occurs during the flight, it will cause pedestrians to be hurt when falling from a high altitude. In some remote areas, the benefits of express delivery may not be sufficient for the construction of drone outlets and payment of maintenance costs. Although， UAVs can effectively improve distribution efficiency and reduce manpower and transportation costs. However, the previous period will have to pay a very high cost.