



# Design and Fabrication of Drone Ambulance for Emergency Medication

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**Abstract.** The emergency medication or the first aid medication is achieved as earlier through the ariel transportation via ambulance drones it will be act as the virtual interface between the doctors in the hospital and the patient want to be treated immediately, this drone contains with the first aid tool kid which will be act as the essential emergency medication vehicle. It is also helps for the servicing in the medical field as transporting medical equipment for testing and pharmaceutical drugs delivery. This drone is specially made for reducing the time wasting for Emergency medication at the golden hour without any traffic delays made from the Regular ambulance. Camera and Monitor, Mic and Speaker will be used for Visual and audio interface between the doctor and the patient. The system is designed to have the short distance flying with more accuracy at less time which carrying a pay load of 3kg this will be helpful to achieve fastest medication at the earlier time. GPS system is used for tracking the location of the patient.

**Key words:** Drone ambulance, Ariel ambulance, Drone Medicine Delivery, Medical communication drone.

## 1. Introduction

These types of drones are majorly used for the medical delivery purpose but in this case we are also used for the medication purpose. The proper first aid medication is very important without any delay at the golden hours. Many accidents are occurring at the unexpected place and time on worldwide this will be more difficult to get proper first aid medication with doctor's guidance at the accurate time. This problem can be solved by making the Ariel transportation at the ambulance. This drone ambulance consist of four major components comparing to other drones to make perfect communication between the doctor and the patient This drone will have the medicine box which will be placed between the supporters of the drone, it will have high resolution camera which will act as visual input and screed also user for visual output this two terms are used as the visually communicating interface and for communicating the audio we are using mica will act as the audio input and speaker which will act as the audio output. By using the GPS system we can track the position of patient. While using the Ariel transportation there will not be any type of traffic issue and it don't want to cover the larger distance and it want only to reach the displacement so there will be more time will be saved at the golden hour. The GPS system which is in the mobile of the patient is tracked to have the accurate data of the patient which is used to place the drone boot at the direct location of patient. The Same GPS system is used for the purpose of taking the medical test and also for making the pharmaceutical drug supply. On the medical box majorly it is used to have the Defibrillator, first aid kid and the small equipment in which this related to the specialty of the hospital. This medical box contains or carries most expensive medical equipment and pharmaceutical drugs which want to be carried out safely and securely and to deliver at the right place and to deliver at the right time to the person how is ordered so that it consist of camera which will also used for the medicine box unlock purpose which will act as the face lock. It can be achieved by using the simple method of face detecting.

## 2. Applications

**Pharmaceutical drug delivery application:** This drone can be used for the fastest delivery of the medicines at the required place using the method of the Ariel transportation and face detection method for the safety purpose.

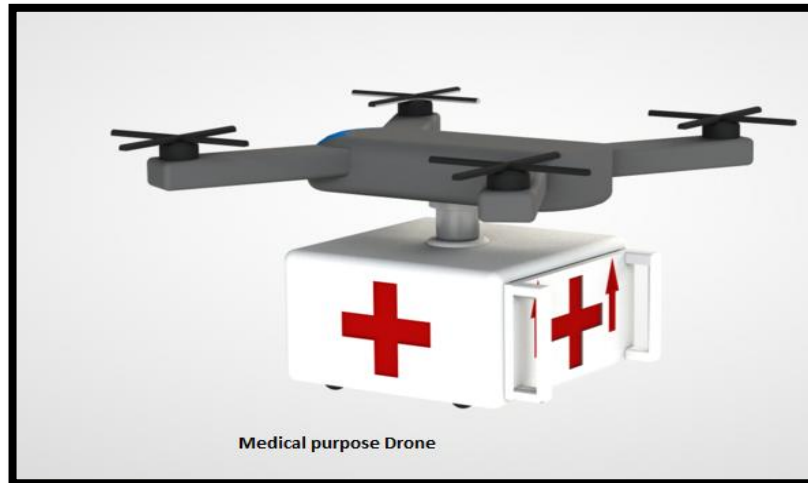
**Rental testing equipment kid delivery application:** The testing kid delivery or taking the samples for the testing this kind of service oriented delivery can be achieved using this method.

**Emergency Drone Ambulance application:** By making the proper first aid at the earlier time can be more helpful to save the life this drones are most useful for making the proper first aid with doctors advice, this drone will act as the interface module between the doctor and the patient. This will be act as the intermediate between them this will be as like as the ambulance which is displacement as the distance to be covered as per this we can reduce the time taken for to reach the patient at the golden hours of the rescue act like this as the ambulance.

## 3. Literature Review

A. Joseph in Arockia Dhivya, J. Premkumar, et.al, Developed a solution for the risk of life increases if medical aid does not reach on time m this project cuts this time short drone ambulance is used it will take an aerial route which is much

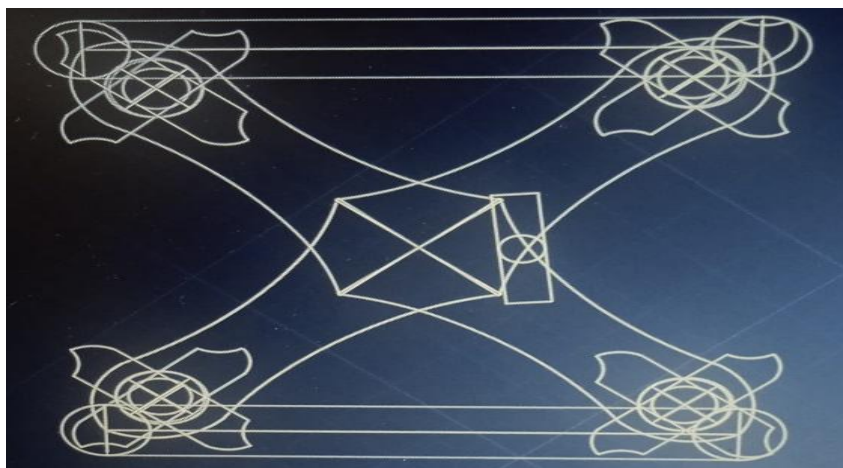
faster than the roads. This drone can carry one type of medical aid like a defibrillator. This paper aims at introducing a system that can fly to the accident spot at the earlier time. But it can carry only the first aid. It deposits the drone with the help of the dropper. Raymond Bond; Hannah Torney; Conor Mackle, et.al ,The system uses the relocations of public accessible defibrillators and ambulance services along with the times when people are likely to have a cardiac arrest to calculate response times. For comparison, a Genetic Algorithm has been developed to determine the strategic response times. Implementation of a national wide aerial drone network may see significant improvements in overall emergency response times for OHCA incidents.



**FIGURE 1.** The Drone ambulance

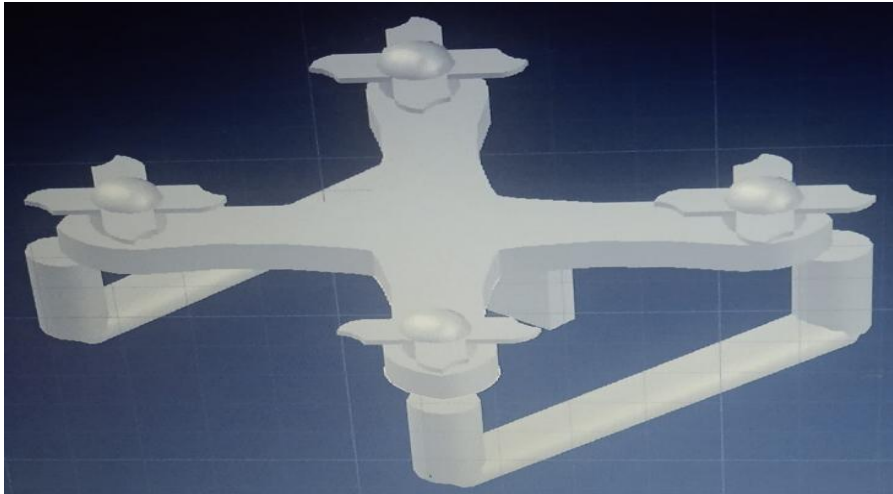
AnshulSingh, P. Kumar, Kaushal Pachauri, Et.al, It is developed to protect the project which is majorly used at the time of the Traffic jam. It is a flying air ambulance which is used to treat the cases faster than a normal ambulance. It enters the cases and saves the time is designed and it also measures the different health parameter using the measuring devices the emergency operator tracks the location and navigate the position using the GPS. This drone enters the scene at the instant time when they call. It consists of mini patient mini patient monitoring system. It consist of various sensor which can be easily attached on the human body so that the important parameter is measured and the result of this test is immediately send to the ambulance and also to the hospital which is near by using the GPS and ZIGBEE technology. This helps the doctor to evaluate quicker and diagnostic with better situation. It is the better way to make the ambulance system to be efficient and also the thing to be replacing the normal ambulance and adapting to the newer thing.

#### 4. Drone Design Model



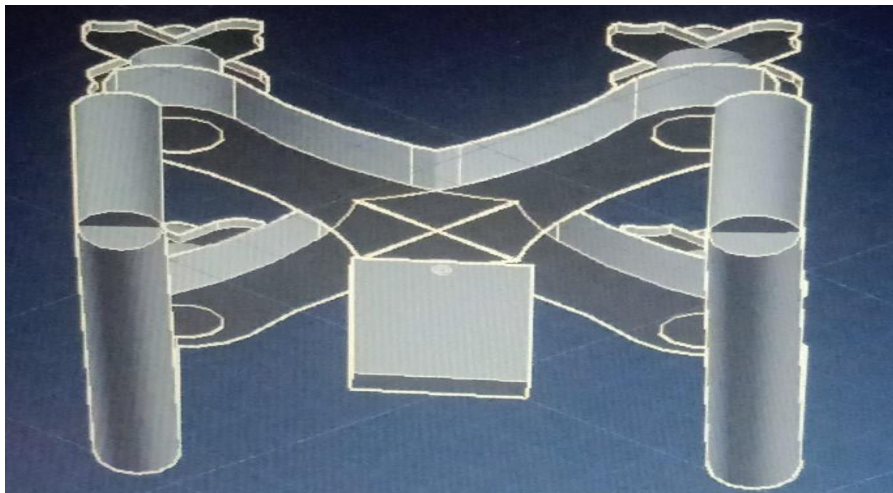
**FIGURE 2.** The 2 Dimensional framework of the Drone ambulance

The above figure shows the complete setup of the mechanism. The figure shows just the single frame, for the following details we will discuss in the further explanation. The blade and the dimensional setup of the dome ambulance is drafted as the setup like this it will be considered as the outline of the project. As shown the Image of the top view of the product design as the figure shown it is the quad copter having the four blades which will the propellers will be rotate in clockwise and anticlockwise as per the opposite direction to each other.



**FIGURE 3.** Isometric view of the drone ambulance

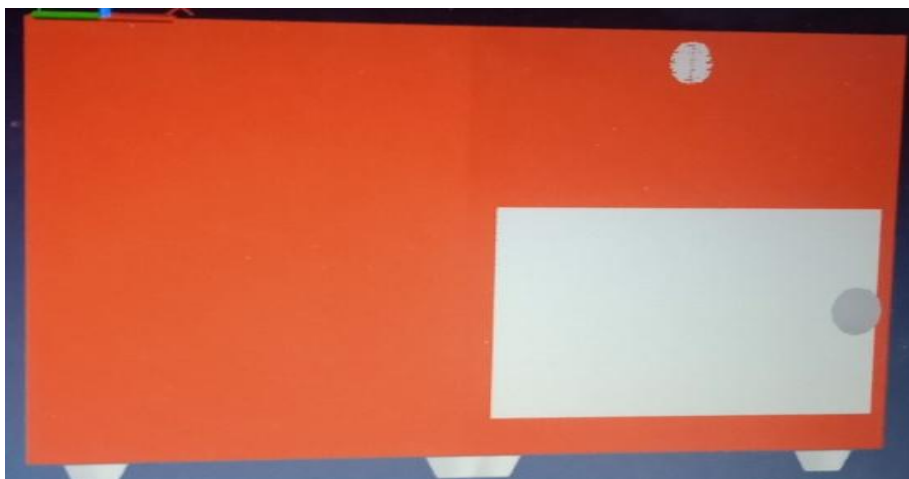
The 3 Dimensional view of the drone ambulance which is designed using the AutoCAD designing software as this is the isometric view of the drone ambulance as this can be used for the identification of the object how it will be in the real time of use and it has the supporters which will be used for the safety landing purpose and the safety delivery purpose which will need to protect the equipment as they are costlier because they are the medical equipment as many as possible depending on their requirements.



**FIGURE 4.** Bottom Corner View of the drone

They contain the camera and the monitoring system which will be helpful for the reason to communicate visually with the doctor and the patient or the victim those who met at the accident and to be rescued at the golden hour.

## 5. Medi-Kit Design Model



**FIGURE 5.** MEDI\_KIT CONTAINER DESIGN MODEL

This container is majorly designed for the safest delivery for the medical equipment and the medicines which are deliver to the patients those who need and it did not want to be get into other hands as it is the pharmaceutical drugs.

## 6. Conclusion

The drone ambulance is having the remarkable benefits as the ambulance which is moving using the displacement as the mode of Ariel transportation. It is also having the doctor and patient interface via visual it is also used for the medical delivery purpose and also for taking the body test as like many.

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