VISVESVARAYA TECHNOLOGICAL UNIVERSITY,BELAGAVI– 590 018

A MINI PROJECT REPORT ON

" Fire Extinguisher & Fire Fighting Drone "

Submitted By,

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MOODBIDRI-574225, KARNATAKA

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ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

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DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to certify that the Mini-Project entitled " **Fire Extinguisher & Fire Fighting Drone**" has been Successfully Completed

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The bonafide students of **Department Mechanical Engineering, Alva's Institute of Engineering and Technology,** affiliated to VISVESVARAYA **TECHNOLOGICAL UNIVERSITY, BELAGAVI,** during the academic year 2020–2021. It is certified that all corrections/suggestions indicated for Internal Assessment have been in corporated in the report. The report has been approved as it satisfies the academic requirements in respect of Micro-Project work prescribed for Bachelor of Engineering.

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ABSTRACT

Fires have lead to huge losses of life and property throughout history. Fast access to the fire and instant extinguishing is key to countering fire threats. Here are the problems firefighters face in various situations:

Forest Wildfires: Wildfires that start in central forest areas are difficult to get to and by the time firefighters reach there with water tanks/ fire brigade vehicles the fires already spread to other areas.

Fires in high buildings: Fire fighting vehicles provide water for spraying on high building fires leading to heavy losses.

Fires in homes: Fire fighters need to manually get into homes and fire emergency areas risking their lives to put out those fires.

To help in all of the above situations we here propose to design a fire fighting drone that can solve all these problems. The drone allows for easy fire extinguishing without risking life. Also it can access forest areas in an instant which would require hours for fire trucks or humans to arrive at and instantly reach high building windows with fire extinguisher.

Our drone makes use of Foam casing PVC balls with dry chemical agents for extinguishing the fire instantly with a small blast. The system makes use of drones to deliver the fire extinguisher balls into the fire. On coming in contact with fire the balls explode with fire extinguishers to put out the fire.

Our system makes use of 4 x Drone motors coupled with a drone frame controlled by a flight controller to operate the drone in a stable condition. We now use a long range rf remote and receiver pair for transmitting drone control commands to the drone. Also the drone is equipped with a small drone camera for live footage viewing by the user.

We now use an Atmega based circuitry to drive a 3 Arm based gripper structure to hold the ball. The trigger received by the receiver instructs a servo motor to release a gripper arm thus dropping the ball into the fire.

Thus we hereby propose a fire fighting drone to help fire fighters easily and instantly counter fire threats without risking their lives.

Note: The Project kit includes only 1 Dummy extinguisher balls. The kit does not include Display for camera, It can be viewed on any android device (Phone/Tab).