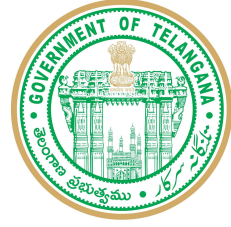


# T-WORKS



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## Proposal for a Remotely Piloted Ornithopter Prototype for T-Works Proto League 2023 - Zund Edition

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Prepared for: T-Works Proto League 2023  
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## Overview

An ornithopter is an aircraft that flies by flapping its wings. The word "ornithopter" is derived from the Greek words "ornithos," meaning bird, and "pteron," meaning wing. These aircraft are designed to mimic the graceful and realistic flight of birds, offering a unique and fascinating flying experience for hobbyists and enthusiasts. Remotely controlled or Autonomous Ornithopters are also being used as a stealthy surveillance and reconnaissance UAV.

## Reference images



## Scope of work

### 1. Design, engineering, prototyping & testing

- 1.1. Research on Ornithopters.
- 1.2. Identify electromechanical components required.
- 1.3. Design the flapping mechanism, fuselage, wings and tail.
- 1.4. Design required Circuits and Wire Harness.
- 1.5. 3D modelling and rendering.
- 1.6. Prototype using various techniques not limited to Digital Cutting, CNC machining, 3d printing etc.
- 1.7. Assembly, integration and testing.

### 2. Target specifications

General Features:

Specification	Description
Size	1. Wingspan - 1500 mm 2. Length - 500 mm 3. Height - 175 mm
Weight	Should be under 1 Kg
Control	Remotely Piloted using a Radio Control Setup
Material	Plastics, Composites, Aluminium, Wood

### 3. Equipment Required

- a. Zund Digital Cutter
- b. 3D Printers
- c. CNC Machinery
- d. Hand and Power Tools
- e. Laser Cutter

## Project Development Plan

Task	Outcome
Research	Critical technical details and design elements
Design	Sketches of the Ornithopter
CAD	3D Models, Renders and Engineering Drawings
Prototyping	RC Ornithopter Prototype
Testing	Tabletop and Flight Testing

## Deliverables

1. Sketches, Renders, and CAD Models.
2. RC Ornithopter Prototype
3. Storage Case

## Budget Estimate

*Budget Estimate for prototyping an RC Ornithopter: **INR 15,000***

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