



Stanford/National Geographic Pterosaur Replica Project

Preface

Building a prehistoric creature is no easy task. Especially when it is inherently unstable and there are no instructions on how to build it. The Stanford/National Geographic Pterosaur Replica Project sought to build a Pterosaur (flying reptile) and called on RCATS and its President, Michael Luvara for their multi-faceted expertise in electronics, system integration, and composites.

Challenge

RCATS worked with an international team of scientists, paleontologists, students, and engineers on a yearlong effort to build this flying reptile. Our expertise focused us on integrating a custom telemetry system and electronics which would provide flight data and controls. Data included pitch and roll rates, g forces, and other features available in the RCATS telemetry system.

Keeping a creature with such a large head stable is no easy task. Working with several Stanford students specializing in flight control, we devised a high-rate (250Hz) feedback system with a low moment of inertia vane to keep the large head pointed into the relative direction of flight.

With such a small available space to work with, our experience with EMI (electromagnetic interference) came to play in solving several issues of noise within the close-knit system. In addition, our rc-100 series of electronic switches came in handy for turning systems on and off on the pterosaur through remote control.

“Sky Monsters”

Building a replica of an extinct flying reptile.



Result

Followed by a National Geographic documentary “Sky Monsters”, the international team experienced many firsts in pterosaur research. Given a short time frame of a year, the result was a highly successful model containing a host of electronics in a very compact space. RCATS was pleased to be a part of this effort and applying its expertise to the pterosaur model. Our ability to work in team functions, enables us to work on a variety of applications, understanding how the systems interact with each other.