

Solar Bird



Objective

Build an unmanned aircraft that will outnumber the flight time and other characteristics of all known unmanned aerial vehicles of similar category.

Challenge

Being experienced in developing both software and hardware for UAVs, CPCS team has decided to take on the challenge of building an unmanned aircraft that can stay aloft for up to 12 hours following its designated route.

Solution

As of September 2019, the project named Solar Bird has been in its active development stage.

Our Solar Bird possesses the following characteristics:

- Size – the length of the aircraft’s wings is 9.8 feet (3.3 meters)
- Weight – 8.8 pounds (4 kilograms)
- Altitude – 1.2 miles (2 kilometers)
- Range – 135.9 acres (55 hectares)

Solar Bird’s components and materials are as follows:

- Components - body and fuselage details, wings, central panel elements
- Components’ material - modern composite materials
- Electronic control system: autopilot, RC channel, power module, telemetry channel, video recorder, motor control system

Solar Bird’s capabilities include but are not limited to:

- Remote human control
- Autopilot mode (fly on a set route)
- Ability to carry a payload such as a camera
- Ability to disperse fertilizers
- Failsafe capability (automatic return-to-home upon loss of control signal or any other problem)

The current version of Solar Bird runs on lithium-polymer batteries with the capability to stay aloft for 2.5 hours. In one of the next releases, we are replacing that with solar batteries and our unique power management controller. This solution will enable Solar Bird to stay aloft for 8-12 hours.

Other roadmap milestones

We also plan to replace Solar Bird’s current 3-channel radio control system with a single-board computer. To enable online and offline work for remote activities, our coming-soon solution will use satellite receivers of local mobile operators. Stay tuned for more coming features!

Result

CPCS team has developed, assembled and tested Solar Bird, an unmanned aircraft. The next release of the UAV will be powered by sunlight. This in turn will allow our Solar Bird to stay in the air much longer than traditional production models.

The product is made of lightweight composite materials. Numerous aerodynamic calculations have allowed us to achieve the maximum energy efficiency. The unique feature of Solar Bird is its maximum power point tracking charge controller. The MPPT controller monitors the whole power system to improve solar charging capabilities and enable longer flights.

Functionally speaking, Solar Bird’s areas of application include:

- Monitoring intelligence - aerial photography, data collection
- Logistics and dispersion of fertilizers -agriculture
- Further research and development of UAV technologies
- And many more

At this stage, Solar Bird product has been successfully tested and is ready for commercial usage (ready-to-fly stage).



Industry

Agriculture, Power Engineering, Civil Safety, Recreation

Application

Terrestrial Object Monitoring, Filmmaking, Research, Smart City Monitoring, Disaster Management

Quick Fact

Ready for commercial usage, Solar Bird is a highly customizable solution capable to stay aloft up to 12 hours

Let us know today, how we can customize Solar Bird for your particular business needs!

About CPCS

From artificial neural networks to custom electronics design, highload and big data projects. CPCS is a team of 100+ senior-level dedicated engineers open to go through an in-depth feature-by-feature product discovery process with you. We believe you would also benefit from our client-first approach, transparency of all our magic, as well as fair and flexible rates.



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