

# Cyborg Cockroaches

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**In news**— An international team of researchers led by Japan's scientific institution, RIKEN's Cluster for Pioneering Research (CPR), have devised a system that can create, that are part insect and part machine.

## About cyborg cockroaches-

- Researchers claim that these insects, whose **movements are controlled by tiny integrated circuits**, will be able to **conduct surveillance in procedures like urban search and rescue**, environmental monitoring and inspection of areas dangerous to humans.
- They also claim that by equipping the cockroaches with small wireless control modules, handlers will be able to **control the insect's legs remotely for long periods of time**.
- The **researchers used Madagascar cockroaches, which are not only the largest species of cockroaches**, reaching an estimated 6 cm, but **are also known for making hissing sounds when disturbed**, which they make by expelling air from the openings on their back.
- Using a 3D printed soft backpack that was connected to the insect's nervous system, they were able to control its leg segments.
- The **researchers also designed the system to be rechargeable, by powering it with a super thin 0.004 mm solar cell module** that is installed on the dorsal side of the cockroach's abdomen.
- This was done to ensure that the battery remains charged and the cockroach can be controlled for long periods of time, while simultaneously ensuring that the movement remains unhindered.