

## How nano-drones are part of the Singularity

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Related Categories: 2012

Drone tech is improving exponentially (a kind of Moore's law for drones). Twice as cheap and small and more powerful every year.

And the technology is not just for armies - local police departments are ordering 1000s of drones for civilian surveillance. Plus there is a big open source/hobbyist drone market. Any one on the planet who wants a drone can have one. Imagine the possibilities. Drones can carry cameras, microphones, wifi snoopers, explosives, chemicals, bio weapons, presents, lasers, smart AI computers, deliver packages for Amazon.com. Think where birds and insects can reach today without your noticing most of the time. Local area mapping, farmer field survey and pest control, crowd control, murder, blinding, stealing stuff, sport mom event multi camera view for the high school game, underwater exploration, police under water body searches, personalized package delivery to where you are. Then imagine a swarm of drones like a flock of birds or insects and what that might be able to do. How do you even defend against a swarm of cheap drones? You could kill hundreds and enough would get through to do the job.

And this is just *one* aspect of the future Singularity of tech, financial, political and social change that is occurring right now. And most people think the 2012 thing ended on 12/21/12 but really it is a multi year thing over maybe 40 years and 12/21/12 is just approx peak date for all the stuff going on.

There are also a lot of technology changes due to Moore's law for computer power doubling every 2 years and similar for many other technologies such as nanotech, DNA, space exploration, big data, medical, AI etc

Sure looks like a tech singularity to me! Plus all this energy shift and tech changes are causing old models of doing things that are bureaucratic such as government, education, big corporations, religions, financial, fiat currency with big debt, the nation state, agriculture, military, big airlines to not work well anymore And hence most (if not all) of these legacy organizations are going to collapse in the next few years. And be replaced (eventually) by a distributed network models of human interactions.

PS One last thought on drones - Imagine this size (or smaller) drone in the hands of the police or local gangs...

## UK deploys toy-sized spy drones in Afghanistan

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<http://rt.com/news/black-hornet-nano-drone-378/>

PD-100 PRS (Image from proxdynamics.com)

British troops in Afghanistan are now using 10-centimeter-long 16-gram spy helicopters to survey Taliban firing spots. The UK Defense Ministry plans to buy 160 of the drones under a contract worth more than \$31 million.

-The remote-controlled PD-100 PRS aircraft, dubbed the Black Hornet, is produced by Norwegian designer Prox Dynamics. The drone is a traditional single-rotor helicopter, scaled down to the size of a toy. British troops use the drones for reconnaissance missions, sending them ahead to inspect enemy positions.

Each drone is equipped with a tiny tillable camera, a GPS coordinate receiver and an onboard autopilot system complete with gyros, accelerometers and pressure sensors, which keeps it stable in flight against winds as strong as 10 knots, according to reviews. The tiny aircraft is agile enough to fly inside compounds, and is quiet enough not to attract unwanted attention. If detected, the drones are cheap enough to be considered expendable.

The auto-pilot either follows a preprogrammed flight plan or receives commands from a manual control station, which is about the size of a large smartphone. The drone's camera can feed compressed video or still images to an operator up to a kilometer away, and its rechargeable battery provides power for about 30 minutes of flight.

In addition to the drone and the controller, each system comes with a ground base station, which houses the operating system, main electronics, internal batteries and chargers. It also protects the drone while being transported. The weight of the entire kit is about a kilogram, easily portable in the field.

PD-100 PRS (Image from proxdynamics.com)

-Prox Dynamics started working on the nano-drone in 2008, and released a video of the first prototype in flight a year later. The manufacturer initially planned for it to be put to civilian use, to scout sites of natural or man-made disasters for survivors and provide intel to rescue teams. A marketable version of the Black Hornet was first presented at the Counter Terrorist Expo in London in April 2012.

The British Ministry of Defense announced last November that it was awarding Prox Dynamics a contract to supply the drones to its troops in Afghanistan. The initial contract is worth about \$4 million, but will likely be expanded to more than \$31 million.