

Ars Electronica Futurelab and Ascending Technologies staged a spectacular show in London:

30 Quadcopters Flew for Paramount's "Star Trek - Into Darkness"

(Linz/London, March 24, 2013) Following its world premiere at the Linz Klangwolke in September 2012, the Ars Electronica Futurelab's computer-controlled swarm of four-rotor mini-whirlybirds—so-called quadcopters—took to the air again on Saturday, March 23, 2013 in a role and setting no less spectacular than the exciting technology itself: as high-tech heralds of Paramount's "Star Trek - Into Darkness" that's opening in movie theaters on May 9th. A squadron of 30 LED-studded AscTec Hummingbird quadcopters hovered above Potters Fields Park near London's Tower Bridge and, in conjunction with Earth Hour, formed a three-dimensional Star Trek logo in the night sky. "This production was a really big challenge, but that's exactly what made it so fascinating," was the enthusiastic response of Ars Electronica Futurelab Director Horst Hörtner. "And this assignment from Paramount Pictures also attests to the worldwide sensation we've created since our debut show last autumn at the Klangwolke." Daniel Gurdan, CEO and Director of Development at quadcopter manufacturer Ascending Technologies, was also personally involved in producing this extravaganza. "The first time the Futurelab approached us, I thought to myself: 'These guys are totally nuts.' But it quickly turned out that they knew exactly what they were after. Now, not even a year later, this show in London impressively demonstrates what we've achieved in the meantime!"

Ars Electronica Futurelab and Ascending Technologies Are World Record Holders

Since September 1, 2012, the Ars Electronica Futurelab, a Linz media art laboratory, and Munich quadcopter manufacturer Ascending Technologies have jointly held a world record as the first to orchestrate a completely automatic flight by a swarm consisting of 50 quadcopters. And they set that record outdoors, where heavy radio & WLAN traffic, gusty winds, humidity and a few drops of rain confronted both hardware and software with enormous challenges.

Joint Research Project

The Futurelab developed software with which the flight behavior of a quadcopter formation can be very flexibly controlled, and that simultaneously makes allowance for GPS measurement errors with respect to the position of individual units. For the choreography of the swarm, the Linz crew created a 3D Studio Max grid in which any given number of points can be defined just like in a three-dimensional animated film. The computations that result are then communicated to the flight control software that pilots the swarm's aerial maneuvers.

Ascending Technologies concentrates on the hardware end. Their 100-gram, LED-studded AscTec Hummingbird quadcopter is the ideal device for this assignment. Small, responsive, robust and equipped with specially developed GPS modules, it can be steered with utmost precision. In order to allow for simultaneous control of multiple quadcopters that's as reliable as the units themselves,

Ascending Technologies completely reconfigured the communication both among the quadcopters as well as with the ground control station. In order to effectuate the requisite reaction speed on the part of the quadcopters without excessive latency time delay, all communication among the swarm and ground control proceeds via a 2.4 GHz transmission channel set up especially for this purpose. Ascending Technologies' development division succeeded in optimizing the flight behavior of the individual quadcopters with respect to maneuverability, precision and reliability to a very high degree—the absolute prerequisite for orchestrating complicated flight patterns in formation. This successful collaboration by the Ars Electronica Futurelab and Ascending Technologies has brought out a complete system that makes it possible to implement totally innovative visualizations even at locations like Central London where it's essential to comply with very stringent safety & security provisions.

For further information, please contact:

[Ascending Technologies GmbH](#)

Stefan Eichhorn
Tel.: +49 89 89 55 60 79 - 0
Stefan.eichhorn@asctec.de

<http://www.asctec.de/>

[Ars Electronica Futurelab](#)

Christopher Sonnleitner
Tel.: +43 732 7272 - 38
Christopher.sonnleitner@aec.at

<http://www.aec.at/futurelab/de/>