

Ars Electronica Linz GmbH sets up a subsidiary for Unmanned Aerial Vehicles

Spaxels: From R&D Project to Commercial Success

(Linz, June 16, 2016) It's been only a few days since the Ars Electronica Futurelab's drone swarm lifted off for its latest aerial display. Sydney Harbour with its famous opera house was the site of that spectacular show. As in last year's world-record flight, a full contingent of 100 quadcopters was once again deployed. New this time around: the squadron's first waterborne takeoff. An audience of approximately 100,000 witnessed four flights by the Linz-based, LED-studded drones rendering three-dimensional figures in the night sky above Sydney—including the silhouette of the opera house that was artistically illuminated especially for the occasion.

Huge Demand since the World Record Flight

"Since our world-record flight for Intel, booking requests for the Spaxels have gone through the roof! We're getting inquiries from all over the world—North America, Europe, the Near East and Far East. Parallel to this, the complexity and dimensions of our shows have reached a magnitude that makes structural adjustments necessary. I mean, the preflight preparations and programming efforts required just to bring off the flights in Australia were so extensive, and then 18 Futurelab staffers spent more than two weeks working on-site in Sydney," said Ars Electronica Linz GmbH CFO Diethard Schwarzmaier. "Up to now, we've been conducting the Spaxels as a profit center within the Futurelab division, and utilizing the revenues generated thereby to finance all of the associated operational expenses and R&D costs totaling €2.5 million. Now, we're moving to the next level of professionalization by establishing Ars Electronica Spaxels GmbH." The new corporation, a wholly-owned subsidiary of Ars Electronica Linz GmbH, will take over operations in early July.

The Futurelab Advances the Technology; the Spin-Off Does the Marketing

Chief executives of the new subsidiary are Diethard Schwarzmaier and Ars Electronica Futurelab Director Horst Hörtner, who heads the crew that invented the Spaxels and has been enhancing them ever since. "Everything having to do with R&D remains within the purview of the Futurelab—for instance, our collaboration with Knapp AG in the field of swarm logistics, which recently led to the registration of a patent. All commercial matters, on the other hand, are being turned over to Spaxels GmbH." Some background was provided by Linz Deputy Mayor Bernhard Baier, chairman of the board of Ars Electronica Linz GmbH: "The fact that revenues have doubled every year since 2012 and that we're now receiving over 50 booking requests per month from all over the world are two prime indicators of the Spaxels' enormous commercial potential. The spin-off now makes it possible to take full advantage of this potential, to limit the entrepreneurial risk this activity entails, and, at the same time, see to it that half the Ars Electronica Futurelab's staff isn't completely occupied from time to time with administrative matters having to do with the Spaxels' appearances." Incidentally: depending on swarm size and the complexity of the airborne figures to be depicted, a Spaxels performance costs at least €50,000, and a show featuring all 100 drones runs to about €250,000.

The Spaxels: It all started with a “crazy idea” ...

They said it couldn't be done! Experts in Austria and abroad unanimously took a pass in early 2012 when the Ars Electronica Futurelab approached them with this idea of a swarm of LED-equipped drones autonomously performing choreographed airborne patterns outdoors—and executing this prodigious feat in September of that same year, no less. Not enough time and money; too many challenges, and far-too-substantial ones at that—wind, humidity and battery output, for instance. As if that weren't enough, a 50-drone swarm was said to be much too large. But the Ars Electronica Futurelab crew refused to be discouraged. Independently, they succeeded in rendering a huge eye-in-the-sky above the Danube as the spectacular centerpiece of the 2012 *Klangwolke* [Cloud of Sound], Linz's annual outdoor extravaganza. This production created a global media sensation and also brought in the first commission—and that from an extraordinarily prominent client. Paramount booked the Linz-based drone swarm to form a gigantic StarTrek logo in the night sky directly above London's Tower Bridge as part of the promotional campaign leading up to the premiere of “Star Trek – Into Darkness.” The upshot: The Spaxels project took off! There followed appearances in Bergen (International Bergen Festival 2013), Ljubljana (Ljubljana Festival 2013), Brisbane (QUT Robotronica Event 2013), Umea (opening festivities of the 2014 European Capital of Culture), Sharjah (opening festivities of the 2014 Islamic Capital of Culture), Hannover (2014 official celebration of the 25th anniversary of German unification), Dubai (2014 National Day celebration in the United Arab Emirates), Linz (2015 Eurovision Song Contest), and the USA (Las Vegas in February 2015; California in March 2016). “By the way, Ars Electronica Linz GmbH became the first company ever permitted to put a drone swarm aloft in the USA,” noted Horst Hörtnner with reference to the flights staged in Las Vegas and California. Meanwhile, these commercial appearances were financing the ongoing efforts to enhance and upgrade the Spaxels' technology. Then, in autumn 2014, the Ars Electronica Futurelab was contacted by Intel. The tantalizing question they posed: Could we imagine 100 drones flying simultaneously? The enthusiastic response: Sure, the Spaxels crew could imagine that! And following about six months of intense preparations, that's exactly what they did on an airstrip in the vicinity of Hamburg in late 2015. What came to be known as “Drone 100” landed Intel in cooperation with the Ars Electronica Futurelab a Guinness World Record in the category “Most Unmanned Aerial Vehicles (UAVs) airborne simultaneously.” A few days ago, the Linz-based crew reprised their performance for Intel, but this time around at a much higher-profile venue: instead of the nondescript Ahrenlohe airfield on the outskirts of Hamburg, the aerial artistry was executed above Sydney Harbour before the eyes of 100,000 delighted spectators.

Spaxels: <http://www.aec.at/spaxels>

Ars Electronica Futurelab: <http://www.aec.at/futurelab/en/>