

â€™You Aceâ€™™



Which factors secure the success of an emergent technology? After years of toil within a university or laboratory, researchers realise that their findings have market potential. Co-operation with a commercial talent may result in a legal entity to develop the technology further and attract the interest of practitioners. These pioneers collaborate with reputable organisations to demonstrate the various benefits. Everyone involved becomes enthusiastic, and forums, user groups and conferences pop up. More and more start-ups want a piece of the action and join in. Major, often blue chip, companies sense the appeal and embrace the brightest firms.

Unmanned Airborne Systems (UAS), which are a low-cost alternative to classical manned aerial photogrammetry, have followed this path to success. Recent years saw experiments tumbling over each other to reveal their suitability for many domains. Pioneers co-operated with cadastres, mapping agencies, water boards, conservationists and disaster managers to demonstrate the aptness of UAS for land administration, map updating, landslide and dike monitoring, and biodiversity and heritage conservation. The low cost of an airborne vehicle equipped with a GNSS-IMU unit, digital camera, micro-electronics and flight planning software combined with photogrammetric software running on PCs for data processing allows fast and automatic generation of maps, 3D models and other products. Flight planning, aerial survey and creation of the end products can often be completed within one day. Meanwhile, the takeover engine is humming. In April 2012, Nasdaq-listed Trimble acquired Gatewing, a Belgium-based company which was founded in 2008 as a spin-off of a PhD research project conducted at the University of Ghent by co-founder Peter Cosyn.

Success nourishes new ideas and developments. Riegl, Austria, mounted a VQ-820-GU hydrographic sensor on Schiebel's Camcopter S-100 to produce a heli that can carry loads of up to 200kg and remain airborne for up to six hours. Although primarily in use for defence purposes, this UAS – which flew for the first time in December 2012 – has been designed for swift and accurate mapping of remote areas, and other applications include mining, exploration and construction. The first conference focusing on UAS for use in geomatics has already taken place in 2011 in Switzerland, and the next one is scheduled for September 2013 at Rostock University, Germany.

Another token of triumph is the divergence of its names. While some call the technology 'UAV' (with the 'V' standing for 'vehicle'), UAV refers to the carrier alone and is increasingly being supplanted by 'UAS' meaning the entire system: the carrier, GNSS-IMU unit, sensor(s), chips, software and ground piloting system. Others even call it 'UAS-g', with the 'g' standing for 'geomatics'. Let us hereby baptise our industry's newborn 'UAS'. We could even pronounce it as 'You Ace', with 'ace' here meaning 'champion flyer'.