

## ALAN PLUMLEY: 1948 - 2019

It is with much sadness that we report the death of Alan Plumley, News Editor for the printed and online editions of GeoConnexion Magazine over the past seven years. He was previously with Stevenage-based GIS and web mapping software specialist Cadcorp, becoming its Regional Sales Manager before retiring in 2010.

In the mid-1990s, and driven by his passion for music, Alan was a director of publishing house Blacktop Music Limited and, as a freelance writer, wrote music reviews for local newspapers. His freelance work extended to fiction and non-fiction articles on travel and he was a member of The International Travel Writers Alliance. He was also a classic car enthusiast and enjoyed recounting how he had tracked down coveted vehicles on both sides of the Atlantic.



Photo: GeoConnexion

In semi-retirement, and making use of his extensive GI industry knowledge, Alan took on the role of News Editor for

GeoConnexion and pursued numerous outside interests, being a volunteer driver for a scheme that helps people get to essential hospital appointments, and taking an active interest in local affairs. Both Alan and wife Val became key members and officers of the Welwyn Planning & Amenity Group, an environmental lobbying group that encourages and coordinates public interest in all issues concerning their home town of Welwyn in Hertfordshire. He also founded Black Top, a specialist educational company supporting 'silver surfers' across the county and further afield.

A few years ago, Alan developed Motor Neurone Disease but, despite its steady progression, continued to work on the magazine and maintain his outside interests. To wife Val, family, and Alan's many friends, we, along with our readers, extend our deepest condolences.

# NEWS & EMERGING TECHNOLOGY

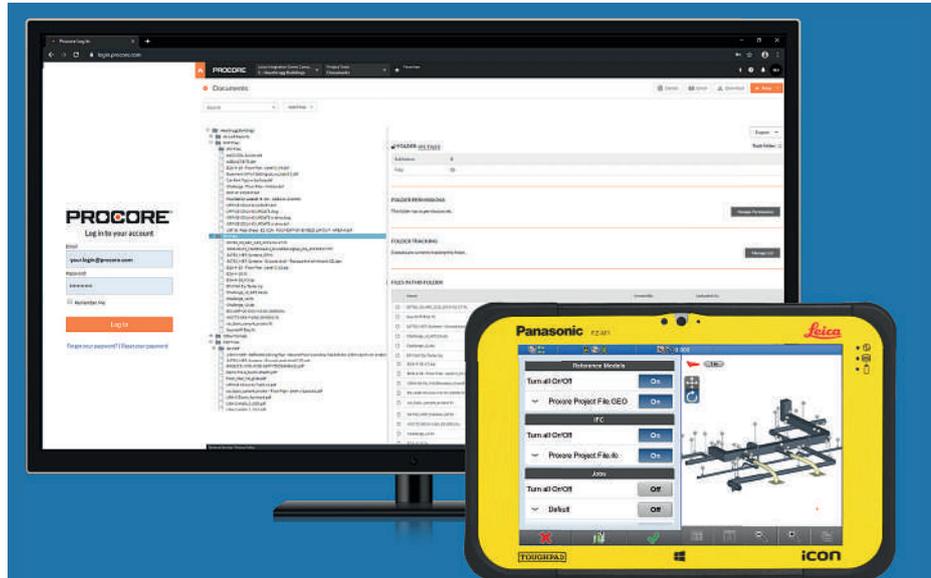
## VARJO ANNOUNCES TWO NEW HUMAN-EYE RESOLUTION HMDS

**Varjo Technologies**, a provider of industrial-grade VR/XR headsets, has doubled its product line offerings with two new state-of-the-art VR headsets, the **VR-2** and the **VR-2 Pro**. These two new products (in addition to the VR-1 and XR-1) are part of Varjo's 'Resolution Revolution', a product line committed to delivering human eye-resolution (over 60 PPD) and fidelity to the most demanding sectors of the professional market. With the introduction of the VR-2 and VR-2 Pro devices, Varjo is setting a new standard in visual clarity and lowering the barrier for enterprise usability of VR. Both the VR-2 and the higher-end VR-2 Pro include support for SteamVR content as well as support for the OpenVR development platform from Valve at ultra-high resolutions (up to 40 PPD/4K rendering per eye) so professional users can quickly and easily access a full range of applications for research, analytics, training and simulation, industrial design, and more. [www.varjo.com](http://www.varjo.com)



## MAPILLARY LAUNCHES A MAPPING DASHCAM SOLUTION

**Mapillary**, the street-level imagery platform that uses computer vision to scale and automate mapping, launched a dashcam that's been customized for mapping purposes. Built by **Pittasoft** in collaboration with Mapillary, the dashcam is lightweight, flexible, and able to capture anything from one to thirty frames per second, depending on the mapping needs. The images are geo-positioned on the map within hours of uploading to Mapillary and processed with computer vision that generates map data for fixing maps. The dashcam requires minimum involvement from the driver, as the camera starts to capture imagery as soon as the van leaves the depot. To logistics companies, this means that they're able to put the dashcam in the vehicle that makes the most sense depending on where they're lacking recent map data. Unlike other mapping platforms, the imagery on Mapillary is processed with computer vision and opened up so that anyone can access and license both the imagery and the data. [www.mapillary.com](http://www.mapillary.com)

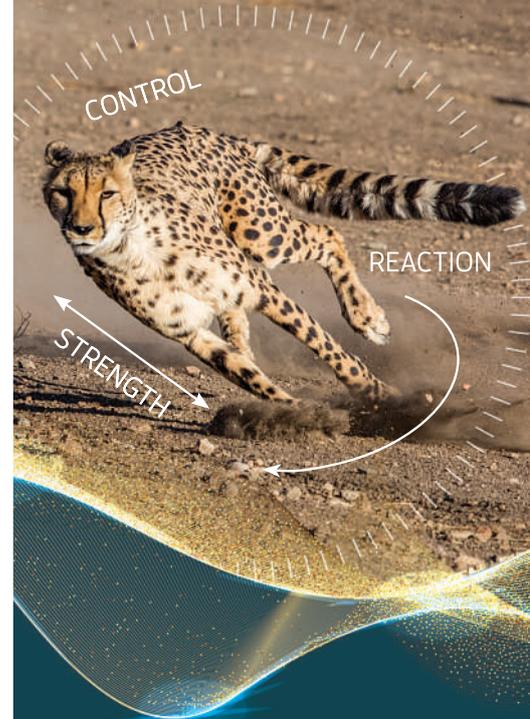


## LATEST CONSTRUCTION FIELD SOFTWARE USES CLOUD INTEGRATION

Leica Geosystems announced a new software upgrade for **Leica iCON field software** as the first development under the collaboration with **Procore**, a provider of construction management software. The two providers have integrated their services for collaboration across Leica iCON field software and Procore's suite of construction management solutions, delivering overarching functionality and efficiency to customers. Opening up the way for new project management possibilities, the collaboration establishes cloud connection between iCON field software and Procore. Users will be able to seamlessly integrate and manage data, enhancing workflows between field and office. [www.leica-geosystems.com](http://www.leica-geosystems.com)

## SXBLUE LAUNCHES SXBLUE TOOLBOX APPLICATION ON IOS

Following the launch of its Android app a year ago, **SXblue** announced the **SXblue ToolBox**, the iOS version intended for iOS compatible SXblue devices. The application was developed with special interest to raw data recording and NTRIP service connection. With the SXblue ToolBox iOS application, the user can analyse the position data provided by the SXblue receiver, as well as location metadata. More important for SXblue clients, the application can record, save and transfer raw data from the GNSS receiver, thereby allowing post-processing activities. The application also acts as a NTRIP client, capable of connecting to a NTRIP server for RTK corrections, and thus allows the receiver to issue very accurate location information. Receiver configuration is easy through the application, with the ability to set up and save user-defined commands for subsequent use. [www.sxbluegps.com](http://www.sxbluegps.com)



# Motion Evolution

You don't get this good by dragging your feet! We're constantly evolving, with cutting edge research and development, bringing inertial sensing products to new markets.

- SURVEY AND MAPPING
- MARINE
- RAIL
- ROBOTICS
- MACHINERY CONTROL
- AUTONOMOUS VEHICLES
- OIL AND GAS/MINING



#motionevolution  
[www.siliconsensing.com/general](http://www.siliconsensing.com/general)

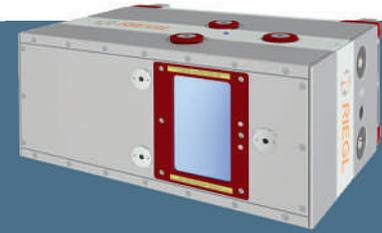
**SILICON SENSING**



20 YEARS OF PARTNERSHIP  
 長年のご愛顧に感謝いたします。

**TAKING DATA VISUALIZATION OUTDOORS**

**Trimble** introduced its **Trimble SiteVision system**, an outdoor augmented reality (AR) solution that enables users to visualize 2D and 3D data on virtually any project site with cellular or internet connectivity for easier and more efficient planning, collaboration and reporting. Combining hardware and software in an integrated, lightweight handheld or pole-mounted solution, users can view 3D models and assets in a real-world environment at a 1:1 scale, from any angle or position. The Trimble SiteVision Integrated Positioning System integrates the **Trimble Catalyst DA1 Antenna, Electronic Distance Measurement (EDM)** rangefinder and power management into a lightweight, handheld device that connects to a user-supplied Android mobile phone. A software subscription is available to single users on a monthly or yearly basis, which combines Trimble's high-accuracy positioning services and cloud-based processing technology to create a centimetre-accurate AR system. The system leverages Trimble cloud-based processing to manage and deliver data and design models. [www.trimble.com](http://www.trimble.com)



**RIEGL'S LATEST WAVEFORM PROCESSING AIRBORNE LASER SCANNER FOR WIDE AREA MAPPING**

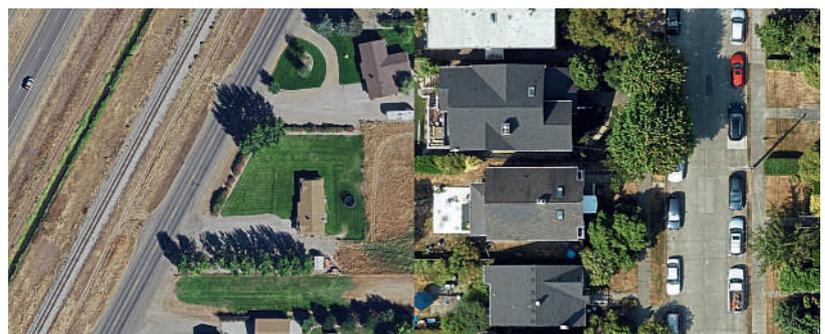
**Riegl** announced the **RIEGL VQ-780** II waveform processing airborne laser scanner for wide area mapping and high productivity. With a pulse repetition rate of 2 MHz and more than 1.33 million measurements per second, this system provides mission results with further increased productivity for both high-point-density mapping and ultra-wide-area mapping. This state-of-the-art airborne laser scanner is designed to work with the latest Inertial Navigation (IMU) Systems, flight management systems, and camera options. The system is complimented with RIEGL's advanced acquisition and data processing software suite that utilizes parallel computing (GPU) for fast data processing. The versatile scanner is designed for highly efficient data acquisition of low, mid, and high altitudes, covering a variety of different airborne laser scanning applications from high density to wide area mapping. [www.riegl.com](http://www.riegl.com)

**NETFOUNDRY'S CLOUD GATEWAY NOW AVAILABLE AT DIGITALOCEAN MARKETPLACE**

Solution providers can now spin up programmable, zero trust networking across the Internet via NetFoundry's 1-click application on the **DigitalOcean Marketplace**. DigitalOcean's Marketplace is a platform that connects developers with easy-to-use, partner-built solutions to simplify and accelerate app development, deployment, and scaling. Independent Software Vendors (ISVs), SaaS providers, Solution Integrators (SIs) and Managed Service Providers (MSPs) whom host their apps in **DigitalOcean** use NetFoundry to enable private network, zero trust connections between their apps and their customers, without requiring their customers to configure and manage VPNs, which are both expensive to operate and often damage the performance of the application. Rather than nailing up 20 VPNs to 20 customers, the ISV uses NetFoundry's APIs, SDKs or web console to centrally and programmatically manage access across all tenants in a least privileged access paradigm. [www.netfoundry.io](http://www.netfoundry.io)

**HXGN CONTENT PROGRAM NOW OFFERS HIGH-DEFINITION AERIAL DATA IN THE US**

**Hexagon's Geosystems** division announced the **HxGN Content Program**, the largest library of on-demand aerial imagery after five years of continuous aerial data collection across the United States, offers a new high-definition orthophoto layer of 15-centimetre- wide area and 5-cm urban area coverage. The program moves from 30 cm to 15 cm resolution across the continental United States, and urban data collection will be enhanced from 15 cm to 5 cm resolution in cities larger than 50,000 population. Since its inception in 2014, the HxGN Content Program has collected 8.3 million square miles (21.5 million square kms) of 1 foot (30 cm) resolution aerial data and 315,000 square miles (815,000 square kms) of 1/2 foot (15 cm) data in urban centers. Urban collection started in 2017. The program follows rigorous acquisition and processing standards to offer the highest positional accuracy for applications such as asset management, public safety, utility mapping and insurance claims. [www.hxgncontent.com](http://www.hxgncontent.com)



## BANEDANMARK CHOOSES FUGRO'S RILA SYSTEM TO SURVEY THE DANISH RAIL NETWORK

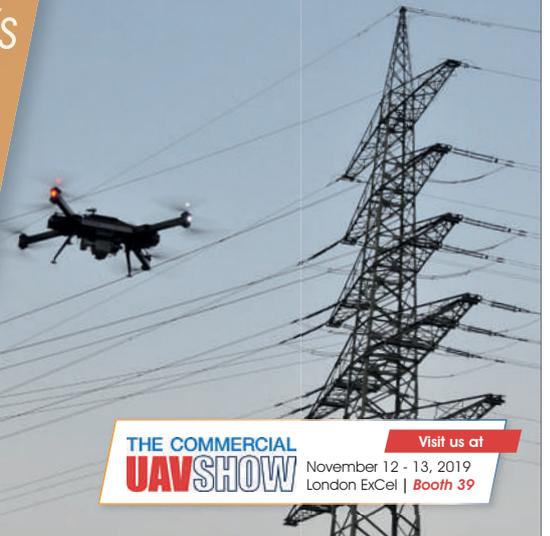
**Banedanmark** has awarded **Fugro** a four-year framework agreement for **train-borne lidar scanning** of its infrastructure using their award-winning RILA system for quick and accurate digital surveys. Banedanmark manages Denmark's public railway infrastructure and is responsible for maintenance, traffic control and development of most of the Danish railway network, covering over 3000 km of tracks. Their priority is to keep the railway efficient, safe and on time, which requires accurate data of the track and any objects in the rail corridor. Fugro's unique **RILA train-borne survey technology** will be used to simultaneously acquire lidar data and imagery of the track and surrounding environment to create a highly accurate, information-rich model of Denmark's railway infrastructure. This so-called 'digital twin' will enable Banedanmark to detect any objects in conflict with their railway infrastructure clearance profile and perform clearance gauge mapping, essential for the safe operation of the network. [www.fugro.com](http://www.fugro.com)



## CREAFORM EXPANDS EUROPEAN COVERAGE OF CUBE-R 3D SCANNING CMM

**Creaform** announced that two European distributors, EMS in Belgium, and Measurement Solutions LDT in the UK, will be demonstrating and selling **CUBE-R**. CUBE-R is a powerful and turnkey automated inspection solution that enables manufacturers to efficiently and accurately detect assembly issues during production and improve product quality. It features MetraSCAN 3D-R, a powerful robot-mounted optical 3D scanner that can be integrated into factory automation systems and eliminates bottlenecks at the traditional coordinate measuring machine (CMM). Shop-floor-ready and designed specifically for hard manufacturing environments, CUBE-R can perform hundreds of part inspections - including on complex, shiny or textured surfaces - in a single day. It speeds up production cycles, all while ensuring the highest product quality possible. [www.creaform3d.com/en](http://www.creaform3d.com/en)

## RIEGL LASER SCANNERS FOR MEDIUM-SIZED UAVs



THE COMMERCIAL UAV SHOW  
November 12 - 13, 2019  
London ExCel | Booth 39

### RIEGL LIDAR WAVEFORM PROCESSING TECHNOLOGY FOR UAV/UAS/RPAS

RIEGL offers a broad line of LiDAR scanners for integration into unmanned aircraft. Choose the scanner exactly right for your application and benefit from the proven RIEGL LiDAR technology: a sophisticated design, Multiple-Time-Around signal processing, multi-target capability, highly accurate and informative scan data, a wide field of view, customized configurations, and user-friendly integration options.



**RIEGL VUX-240**  
for high point density corridor mapping

- up to 1800 kHz Laser PRR
- range up to 2150 m @  $\rho \geq 80\%$
- 75° field of view
- accuracy 20 mm, precision 15 mm
- up to 15 target returns
- 4.1 kg / 9 lbs



**RIEGL VQ-840-G**  
topo-bathymetric scanner  
for coastline surveying

- up to 200 kHz Laser PRR
- water penetration  $\geq 2$  Secchi depth
- 40° field of view
- optional high-resolution digital camera or infrared laser rangefinder
- 12 kg / 26.5 lbs

Also explore RIEGL's proven UAV LiDAR sensors for small unmanned aircraft at [www.riegl.com](http://www.riegl.com)

- ▶ **RIEGL miniVUX-1UAV / miniVUX-2UAV**  
for integration in various small UAVs
- ▶ **RIEGL miniVUX-1DL „Downward-Looking“**  
tailored design for corridor mapping
- ▶ **RIEGL VUX-1UAV**  
versatile & powerful sensor for general UAV-based surveying



newsroom.riegl.international  
f t i w y



RIEGL LMS GmbH, Austria | RIEGL USA Inc. | RIEGL Japan Ltd. | RIEGL China Ltd. | RIEGL Australia Pty Ltd.

**SENSERA PARTNERS WITH AUTODESK TO EXHIBIT 3D IOT POSITIONING SOLUTION**

**Sensera Limited**, an Internet of Things (IoT) solution provider, that delivers sensor-based products transforming real-time data into meaningful information, action and value, announces that it has been selected by **Autodesk** to participate in its Residency Program at its Technology Center in Boston, MA. Autodesk is a provider of 3D design, engineering and entertainment software, which generates more than US\$3.2 billion in annual revenue. The Residency Program at the Autodesk Technology Centers in Boston, San Francisco, and Toronto provides open workspaces for teams from industry, academic and startup communities doing forward-looking work in the areas of construction, manufacturing and design. Sensera joins other residents at the Boston Technology Centre, which focuses on industrialized construction, digital fabrication, automation and robotics in construction, and other ideas that are transforming the built world including architecture and engineering. [www.sensera.com](http://www.sensera.com)



**BRINGING PRECISE POSITIONING TECHNOLOGY TO AUTONOMOUS VEHICLE COMPUTE PLATFORMS**

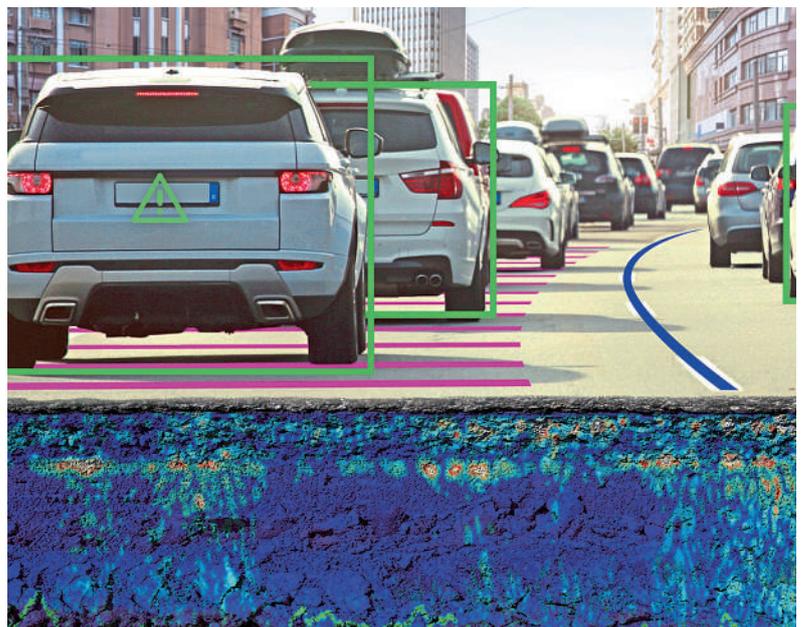
**Swift Navigation**, a San Francisco-based tech firm redefining Global Navigation Satellite System (GNSS) positioning technology for autonomous vehicles, announced a partnership with **Arm**, a global provider of semiconductor IP. The partnership means Arm will offer Swift Navigation's high-integrity, high-accuracy GNSS positioning solutions as an option on Arm-based platforms to developers of autonomous and connected vehicles. Standard GNSS positioning is three to five meters in depth which is not suitable for safety-critical systems requiring lane-level accuracy. For higher levels of autonomous capability, a vehicle needs to be able to determine its absolute location. To achieve this, high-precision localization is needed to get to accuracy down to the centimetre. Swift's partnership with Arm will deliver a high-integrity, high-accuracy GNSS positioning solution for silicon makers and Tier 1 and 2 auto suppliers to integrate precise positioning into the sensor suite. [www.swiftnav.com](http://www.swiftnav.com)

**NEW EUROPEAN SPACE AGENCY MISSION WILL ADD TO CLIMATE KNOWLEDGE**

A new European mission, the **Far-infrared Outgoing Radiation Understanding and Monitoring mission**, or **FORUM**, will add a crucial measurement to help our understanding of Earth's changing climate. Measurements from the new spacecraft will improve confidence in the accuracy of climate change assessments that form the basis for future policy decisions. FORUM will record far-infrared radiation emitted from Earth to space – extending beyond the parts of the infrared spectrum currently being measured. The measurements will help the study of Earth's radiation budget – the balance between the incoming radiation mostly from the Sun at short wavelengths, and outgoing radiation, which is a combination of reflected radiation from the Sun and radiation emitted by the Earth system, much of it a longer wavelengths. FORUM is ESA's ninth Earth Explorer mission. [www.esa.int/ESA](http://www.esa.int/ESA)

**THE UNLIKELY NEW HERO OF AUTONOMOUS VEHICLES**

**GSSI**, a manufacturer of ground penetrating radar (GPR) equipment, announces **TerraVision**, the first-to-market localizing ground penetrating radar (LGPR) technology that improves navigation for autonomous vehicles (AVs). The LGPR technology was originally developed at MIT Lincoln Laboratory for military applications and is designed to help navigate even in the worst driving conditions on the planet. It works by sending radio waves into the ground, creating a digital fingerprint of the subsurface. This underground map of soils and rocks becomes the reference to guide autonomous vehicles. LGPR is unaffected by above-ground conditions like snow, fog, rain, dust – conditions that present huge challenges to the usual AV sensors. GSSI has decided initially to focus overseas, given the uncertainties around FCC restrictions in the United States, and since they had been asked by several firms around the world to develop and test LGPR. This includes two large Japanese and German companies working on AV navigation. [www.geophysical.com](http://www.geophysical.com)



## AIRBUS AND TELESPIAZIO JOIN FORCES TO SELL MILITARY TELECOMMUNICATIONS SERVICES ON SYRACUSE IV SATELLITES

**Airbus** and **Telespazio** (Leonardo/Thales) have set up a **partnership** to market military telecommunications services using the future **Syracuse IV satellites**. This partnership will lead to the creation of France's leading private operator of military satellite telecommunications. It demonstrates the desire for cooperation by European industrial prime contractors Airbus, Thales and Leonardo, as well as the French State, in marketing Syracuse IV satellite capacity for the benefit of armed and security forces in Europe and around the world. With this partnership, Airbus and Telespazio will be able to sell Syracuse IV satellite capacity and various high-added-value services such as anchor capacity (connection of satellite communications to the ground networks of third-party customers), end-to-end services with capacity and throughput guarantees, engineering and maintenance services. [www.airbus.com](http://www.airbus.com)



## COMPETITIVE BOOST FOR EBEE PILOTS

**KOREC** announced that its Drone Pilot Academy, the company's training partners in the provision of flight training and Civil Aviation Authority (CAA) accredited pilot training courses, have successfully launched their Operational Safety Case consultancy service to assist **KOREC senseFly eBee** users attain EVLOS (Extended Visual Line of Sight) approval. A UK eBee user has already successfully attained this approval through the new Drone Pilot Academy service. It will now be possible for the users of eBee X, eBee Plus and eBee Classic models in the UK and Northern Ireland to get approval to fly up to 1500m away from the remote pilot (compared to usual 500m) giving a potential operating range of 3km. This will bring a significant competitive advantage to KOREC customers, particularly those surveying quarries, coastal areas and large-scale projects by cutting extensively the need for multiple take-off and landing points. [www.korecgroup.com](http://www.korecgroup.com)



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**RIEGL VUX-1UAV**  
versatile & powerful sensor for wide area UAV surveying

- up to 550 kHz Laser PRR
- range up to 1050 m @  $p \geq 80\%$
- 330° field of view
- accuracy 10 mm, precision 5 mm
- up to 15 target returns
- 3.5 kg / 7.7 lbs



**RIEGL miniVUX-1UAV / miniVUX-2UAV**  
minaturized LiDAR sensors for integration to various small UAVs

- 360° field of view
- accuracy 15 mm, precision 10 mm
- up to 5 target returns
- extremely lightweight 1.55 kg / 3.4 lbs

**RIEGL miniVUX-1UAV** 100 kHz Laser PRR range @ 100 kHz: up to 330 m @  $p \geq 80\%$   
**RIEGL miniVUX-2UAV** 100 kHz / 200 kHz Laser PRR selectable range @ 100 kHz: as given for miniVUX-1UAV range @ 200 kHz: up to 280 m @  $p \geq 80\%$

Also explore RIEGL's proven UAV LiDAR sensors for small unmanned aircraft at [www.riegl.com](http://www.riegl.com)

- ▶ **RIEGL miniVUX-1DL** „Downward-Looking“ tailored design for corridor mapping
- ▶ **RIEGL VUX-240** for high point density corridor mapping
- ▶ **RIEGL VQ-840-G** topo-bathymetric scanner for coastline surveying

Scan the QR code to watch the RIEGL videos on our YouTube Channel. [www.riegl.com](http://www.riegl.com)

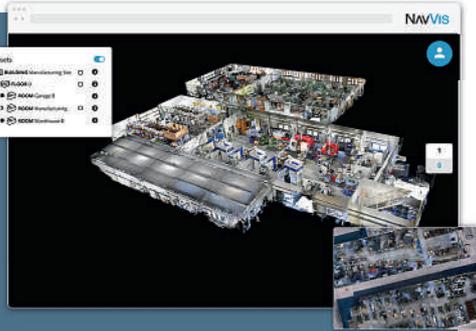
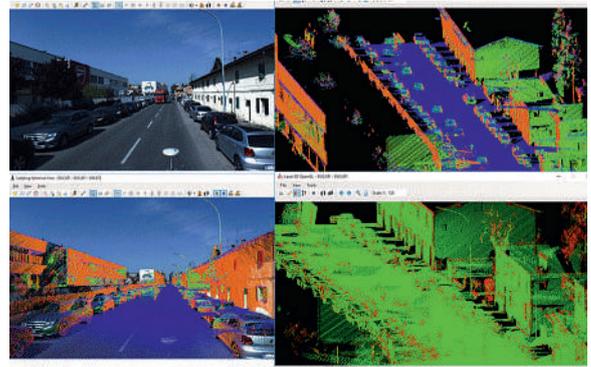
newsroom.riegl.international

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**ROAD-SIT SURVEY V. 7.5 RELEASED**

SITECO Infomatica SRL showcased the Road-Scanner family of Mobile Mapping Systems and the new software release of Road-SIT Survey during the latest edition of Intergeo. Road-SIT Survey is the mobile mapping data application developed by Siteco, fully compatible with the most widespread mobile mapping systems like the Optech-Lynx, Riegl-VMX, Topcon IPS3 and Leica Pegasus, as well as the well-known Siteco's Road-Scanner. Road-SIT Survey, v. 7.5, developed in collaboration with the Bologna University Computer Vision Lab, has been enhanced by integrating new advanced features and smart functionalities with regards to point cloud colouring, classification of planes, classification, line extraction and the addition of new filters.

[www.sitecoinf.it/en](http://www.sitecoinf.it/en)



**NAVVIS INDOORVIEWER 2.5 RELEASED**

3D building visualization software will include a new feature to select, crop and download point cloud sections in browser. NavVis, a global provider of indoor spatial intelligence technology and enterprise solutions, announces the beta release of NavVis IndoorViewer 2.5. This major software release will significantly extend the point cloud functionality through a new download feature that lets users select and crop sections of large point cloud files in browser, and then download and use the file in third party modelling software.

[www.navvis.com](http://www.navvis.com)

**VEXCEL IMAGING'S EUROPEAN DATA PROGRAM**

Vexcel Imaging, a provider of aerial camera systems, mobile mapping platforms and fully integrated photogrammetry software, announced the launch of Europe's highest quality and most up-to-date aerial image library. Starting in Germany, the cloud-based image library, now available via subscription service, enables companies, public safety organizations and government agencies to save a significant amount of time and money by making it fast and simple to acquire up-to-date, concise, high-definition imagery and leverage it organization-wide into critical location intelligence. Starting with orthorectified imagery at 20 cm resolution, the subscription service also includes near-infrared imagery and derivative data products such as digital terrain models, making it easy for organizations to integrate geospatial location information into their tools and workflows. Vexcel Imaging is in the process of capturing aerial imagery of Germany at 20 cm with its UltraCam Condor Mark 1 Airborne System. In early 2020, the program will expand its country-wide contiguous data capture across other European countries.

[www.vexcel-imaging.com](http://www.vexcel-imaging.com)

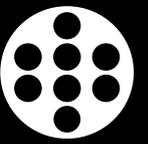


**ENHANCED CUT-AND-FILL MAPPING ADDED IN DRONE SURVEYING PACKAGE**

Virtual Surveyor has added cut-and-fill mapping capabilities to Version 7.0 of its popular drone surveying package. The new functionality enables users to quickly perform volume difference calculations and generate cut-and-fill maps from drone images captured on two or more different dates. The Virtual Surveyor package enables professional surveyors to generate accurate topographic end products from drone data five times faster than traditional field work, bridging the gap between UAV photogrammetric processing software and engineering design packages. The enhanced cut-and-fill functions are part of a new feature in Virtual Surveyor 7.0 called Terrain States. This allows the user to create separate Terrain States for surface models generated from UAV images captured over the same area on different dates. The user can easily delineate and delete objects, such as bulldozers or excavators, that appear in a single surface model. These changes are saved in only one Terrain State so they do not cause volume measurement errors when a surface model is subtracted from another.

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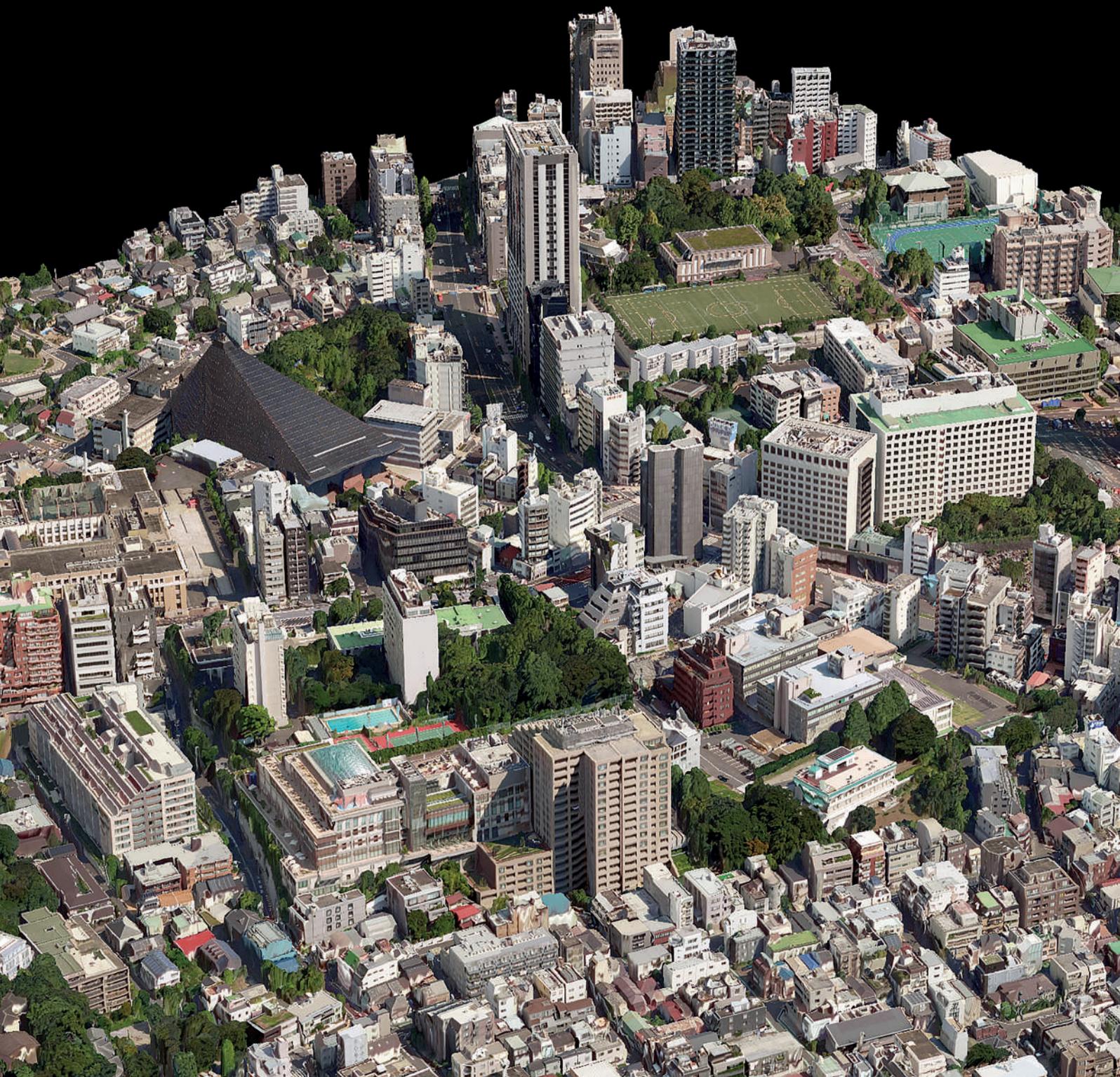


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## INSPECTION AND MONITORING TECHNOLOGY ADVANCEMENTS

**Topcon Positioning Group** announces advancements in its inspection and monitoring portfolio designed to ensure longer term health of buildings and infrastructure assets. Among the improvements announced include new flight planning software for the **Topcon rotary-wing UAV**; mass data photogrammetry processing integration capabilities, as well as the release of **Delta Link** version two, the new command console for the **Topcon construction and structural health monitoring system**.

**New Intel Mission Control Software** is designed to facilitate automated flight planning, managing missions, and data handling for the Topcon rotary-wing UAV offering. UAV operators can also take advantage of new cloud-based photogrammetry processing, powered by **Bentley ContextCapture**, in the **MAGNET Collage Web 2 service** for publication, sharing, and analysis of data. The new Delta Link version two provides communications support for Topcon autonomous construction and structural health monitoring in the field. Options include Ethernet, Wi-Fi, and a globally approved integrated cellular modem. The system manages each power source, maximizing system availability. [www.topconpositioning.com](http://www.topconpositioning.com)



## BATTELLE SELECTS HEADWALL HYPERSPECTRAL SENSORS

**Headwall** announced that its hyperspectral imaging technology is part of a proposal by **Battelle** chosen as a first-stage finalist for the Department of Homeland Security (DHS) Science and Technology (S&T) Directorate Opioid Detection Challenge. The Automated Multimodal Opioid Detection system by Battelle uses Headwall hyperspectral imaging sensors, as well as dual-energy radiography and machine-learning algorithms, to non-invasively detect opioids in packages without disrupting the flow of mail. The Battelle/Headwall system now moves on to a 14-week accelerator stage, during which a deployable prototype will be developed. Government and industry mentors will provide specialized support on topics such as the inspection process, trace detection, artificial intelligence, and user design. These tools would be deployed in international mail, express consignment facilities, and other environments across the country. [www.headwallphotonics.com](http://www.headwallphotonics.com)

## PASSIVE 3D STEREO PRODUCT FAMILY IS GROWING

**Schneider Digital's** innovative, passive stereo monitor family has added a fourth model: with immediate effect, the **3D PluraView display** is also available in a compact housing with 24" screen diagonal and Full HD resolution. The 3D PluraView monitor family is the passive 3D stereo system with the highest user acceptance of any 3D stereo monitor currently on the market. The plug & play beam splitter technology has been established in the market for 14 years and has become established in the 4K 10-bit (UHD) version as a 3D stereo reference. In addition to the three available models, a fourth 3D PluraView now joins the family of monitors: The 3D PluraView 24" with 144Hz refresh rate and full HD resolution. In the areas of GIS / mapping, photogrammetry, laser scanning, computer tomography, simulation, molecular research or design / CAD stereo software applications, these four different models are available for a wide variety of requirements. [www.3d-pluraview.com](http://www.3d-pluraview.com)

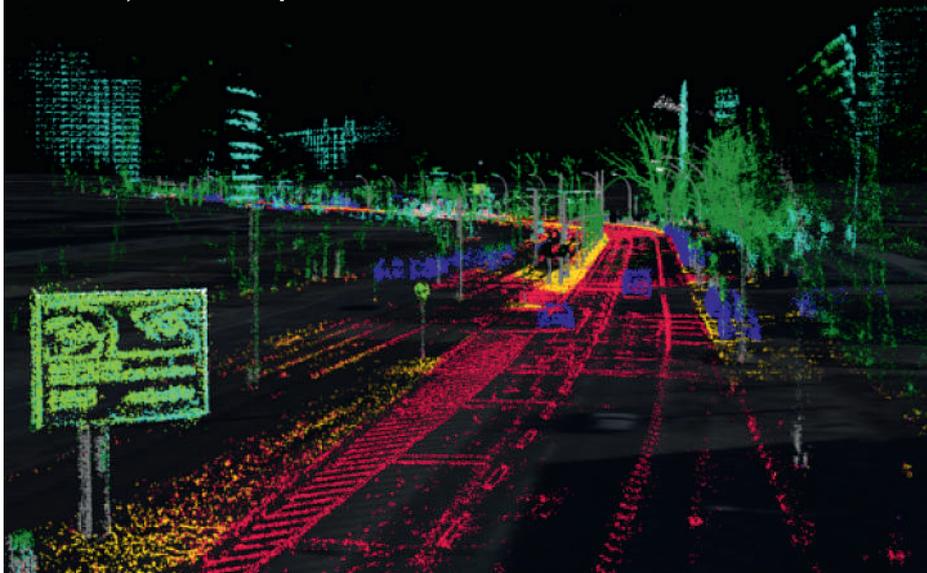


## NEXT-GENERATION R620 GNSS RECEIVER RELEASE

**Hemisphere GNSS** introduced the next-generation **R620 GNSS receiver**, a compact, versatile, and full-featured positioning system. The wide range of functionality and ease-of-use built into the R620 makes it an ideal fit for a variety of land and marine applications requiring high-precision positioning. The R620 GNSS receiver is a complete refresh of the previous version (R330) and includes an all-new low-profile ruggedized enclosure. With the flexibility and scalability offered within the R620 system, customers can start with sub-meter positioning accuracy and upgrade the receiver (through activations and subscriptions) to add functionality and improve performance capability to centimeter-level accuracy. The R620 combines Hemisphere's Athena GNSS engine and Atlas L-band correction technologies with status LEDs and a powerful WebUI. These features make the R620 easy to monitor, configure, and offer an unparalleled level of customer-friendly performance. [www.hgnss.com](http://www.hgnss.com)

## SEPTENTRIO AND ARTISENSE DEMONSTRATE ADVANCED LOCALIZATION TECHNOLOGY FOR AV

**Septentrio**, a manufacturer of high-accuracy GPS/GNSS technology for demanding applications, is providing positioning technology to **Artisense**, supplier of innovative computer vision solutions for automated vehicles. Artisense incorporates Septentrio GPS/GNSS in their latest Visual Inertial Navigation System (VINS). VINS combines computer vision, inertial sensors and GNSS (Global Navigation Satellite System) measurements to deliver highly accurate global 3D positioning and orientation information in any environment, even indoors. Multi-constellation, multi-frequency GNSS technology provides reliable centimetre-level global positioning to the VINS system with accuracy required for lane-level manoeuvring and V2V warning systems. Cameras and inertial sensors continue accurate localization as the vehicle moves into tunnels or parking garages with no line-of-sight to GNSS satellites. Although the system uses a relatively simple MEMs IMU and off-the-shelf cameras, it delivers precision and reliability of a high-end INS system. [www.septentrio.com/en](http://www.septentrio.com/en)



## UNMANNED HELICOPTER FOR PRECISION FARMING

**UAVOS** has announced the addition of **R22-UV** unmanned helicopter to its agriculture unmanned aircraft portfolio for spraying for diseases, weed and pest control, vegetative control. R22-UV is a manned Robinson-22 helicopter converted by UAVOS to an unmanned aircraft. Agro-drone R22-UV is equipped with a specially developed (for Robinson helicopters) utility to deliver liquid chemicals - spray system SIMPLEX MODEL 222. System weight -42kg. Boom span- 7m. Swath width - 14-16m. R22-UV drone is provided with a 100-liter tank for chemicals and can stay airborne for 2 hours.

[www.uavos.com](http://www.uavos.com)

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