

NEWS & EMERGING TECHNOLOGY

AIRBORNE HYPERSPECTRAL SURVEY AND MINERAL MAPPING IN SOUTH GREENLAND

ASL Environmental Sciences (ASL) in Victoria, British Columbia, Canada has, following a tender process, entered into a contract with the Ministry of Mineral Resources, Government of Greenland. Under this contract ASL will process and analyse a large amount of **airborne hyperspectral data** in order to produce **mineral maps** for the Gardar Province in south Greenland. Hyperspectral remote sensing (also referred to as imaging spectroscopy) provides image data recorded in a large number of wavelengths, many outside of the human visual range. The image data can be used in the same fashion

as a laboratory spectrometer, to detect and quantitatively map spectral features specific to many minerals. By comparing on-ground hyperspectral measurements with the airborne measurements, it is possible to find areas where a given mineral has not been previously registered. The Gardar Province comprises a suite of Proterozoic alkaline igneous rocks associated with continental rifting in South Greenland. In this area there are great opportunities to make new discoveries of a variety of mineral resources, including rare earth elements. www.aslenv.com



JUNIPER SYSTEMS INTRODUCES MESA 3 RUGGED TABLET RUNNING ANDROID

Juniper Systems announced the release of the **Mesa 3 Rugged Tablet** running on the **Android** operating system. Built on the success of the Mesa 2, the Mesa 3 running Android is the next evolution in rugged handheld computing and data collection for all Android-based application needs. Offering performance increases across the board, the Mesa 3 is backed by Juniper Systems' world-class support and durability promise. Running on **Android 9.0**, the Mesa 3 will grant users access to the **Google Play Store** providing the data collecting, mapping, and productivity applications users require to be successful. The Mesa 3 running Android sports an octa-core processor from Qualcomm that offers the speed and flexibility specialists running processor-intensive applications need in the field. The processor is backed with 6GB of system memory (RAM). This amount of RAM allows for more demanding tasks, larger datasheets, and more programs running at once on the device. www.junipersys.com



LEICA GEOSYSTEMS, ABTECH EXPAND PARTNERSHIP

Leica Geosystems, part of Hexagon, announced an expansion of its distribution partnership with **ABTECH**, a provider of **construction technologies** in Eastern Canada, to offer the Ontario market a complete portfolio of solutions, backed by local service, training and technical support. Building off ABTECH's established distribution operations, the expansion provides construction companies doing business in Ontario with a one-stop-shop for any type of project, civil or building. Almost every construction project today requires a mix of technologies to more effectively plan, design, construct and maintain infrastructure. The comprehensive portfolio of digital construction solutions from Leica Geosystems provides construction professionals with the solutions they need to more effectively construct assets, across all phases of the project. From surveying and measurement and utility detection, to machine control systems, reality capture, layout and monitoring, Ontario customers now have one place to go for all their construction technology needs. www.leica-geosystems.com

CORELOGIC ACQUIRES LOCATION, INC.

CoreLogic, a global property information, analytics and data-enabled services provider, announced the completion of the company's acquisition of **Location, Inc.**, a provider of geographic data sciences and predictive, location-based analytics for businesses across the U.S. and Canada. Location, Inc.'s proprietary **RiskSuite** and **NeighborhoodScout** solutions combine the company's deep spatial and property risk assets with advanced machine learning and analytics expertise to provide market insights, projections and risk assessments for the insurance, real estate, and finance sectors. Commercial and residential underwriters rely on Location, Inc.'s suite of claims risk products, including non-weather **WaterRisk** and **FireRisk**, as well as **HailRisk**, as the industry's first claim probability and severity platform that predicts loss costs for these perils. www.corelogic.com

NEW WEBSITE

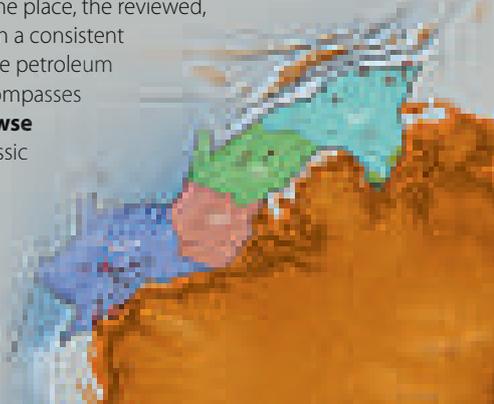


COMING SOON

GeoConnexion.com

REVEALING PROSPECTIVITY OF NORTH WEST SHELF AND BANDA ARC

CGG has completed **JumpStart multi-client geoscience packages** for the North West Shelf (NWS) of Australia and the Banda Arc in the Asia-Pacific region. Both packages are now available and enhance understanding of the prospectivity of these two high-potential regions, allowing the assessment of exciting new plays. JumpStart packages mobilize the full suite of CGG's geoscience capabilities to accelerate and support exploration efforts. They integrate all available data in a specific geographical area and frame it within a geological context. Clients can then easily access, in one place, the reviewed, validated, calibrated and interpreted data, in a consistent and ready-to-use format in order to evaluate petroleum systems. The NWS JumpStart package encompasses the **Northern Carnarvon, Roebuck, Browse and Bonaparte basins**, where recent Triassic discoveries have heightened industry interest. The new study fills key knowledge gaps regarding the region's Triassic paleogeography and petroleum systems and mitigates exploration risk for clients evaluating Triassic plays in this region. www.cgg.com



SEPTENTRIO AND ANALOG DEVICES COLLABORATE

Septentrio, a provider of high-accuracy GNSS receivers, announced a collaboration with **Analog Devices**. The two companies are combining Analog Devices' high-quality **IMUs** with Septentrio's multi-frequency, multi-constellation **GNSS receivers**. The resulting high-performance GNSS/INS systems deliver centimeter-accurate positioning together with 3D orientation (heading, pitch and roll), ideal for applications such as automotive ADAS and industrial automation. Septentrio will incorporate Analog Devices' advanced industrial-grade IMUs into a selection of its GNSS/INS products. Working directly with Analog Devices allows Septentrio to provide faster and more efficient GNSS/INS integration solutions for high-volume customers. This collaboration promises a solid foundation for design and production of top-performance integrated positioning and inertial solutions, with first products available in spring 2020. www.septentrio.com

INAUGURAL EUROPEAN AERIAL SURVEY INDUSTRY ASSOCIATION EVENT

Delegates from around the world flocked to the first **European Association of Aerial Surveying Industries (EAASI) Summit**. Attracted by a topical conference programme, working group sessions and a variety of networking opportunities the event in Brussels earlier this month welcomed representatives of more than 40 organisations, from 18 countries and 3 continents. The EAASI Summit conference included keynote speakers Eduardo Garcia Gonzales of **CANSO** (Civil Air Navigation Services Organisation) and Hugo De Groof, Directorate General for the Environment at the **European Commission**. Other highlights of the two-day programme were a talk on geo-political advocacy by Brian Raber, Past President of **MAPPS**, a presentation on the importance of collaborating internationally by Mick Cory, Executive Director of **EuroGeographics** and a review of aerial surveying in the Asia Pacific region by Brian Nicholls, Director of **AAM Pty**. www.eaasi.eu



PHASE ONE INDUSTRIAL AND AI-SURVEY GMBH SIGN PARTNER INTEGRATOR AGREEMENT

Phase One Industrial, a provider of medium format metric cameras and imaging solutions for aerial applications, announced that it has signed an agreement with **AI-Survey GmbH**, a developer of UAS survey package, services and tailor-made solutions. Together, these companies' high-end products are opening up new opportunities in drone-based high-accuracy mapping and inspection markets. Under this agreement, AI-Survey will support Phase One **Industrial's iXM range of cameras** in the UAV market for high-accuracy mapping and inspection. AI-Survey offers fast and efficient, simple and reliable UAS solutions tailored for geodesists with millimetre imaging results. www.industrial.phaseone.com

SIMACTIVE FURTHER ACCELERATES PROCESSING WITH NEW VERSION 8.4

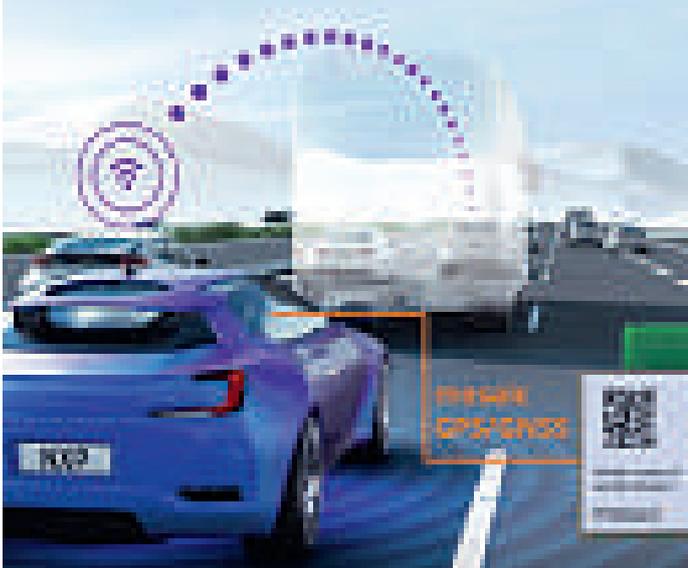
SimActive, a developer of photogrammetry software, announced the release of Correlator3D version 8.4 with significant accelerations. The new version leads to speeds that are multiple times faster compared to previous releases. Correlator3D 8.4 allows a dynamic allocation of hardware resources, reducing potential bottlenecks from PC components. For example, solid states drives (SSD) are used more efficiently by the software, as well as additional CPU cores and extra RAM. www.simactive.com



SEPTENTRIO MOSAIC ENABLES NXP'S V2X SOLUTION

NXP, a provider of communication technology for embedded applications, is integrating **Septentrio GNSS technology** into its **V2X (Vehicle-to-Everything)** reference design and development boards. Septentrio, a provider of high-accuracy GNSS positioning solutions, is providing mosaic, a true multi-frequency, multi-constellation GNSS receiver module, delivering accurate and reliable global localization even in harsh environments. V2X technology enables cars to communicate with infrastructure as well as other vehicles, making driving safer and more efficient. It enables cars to "see" what's around the corner or through the dense urban environment warning the driver about road works, traffic congestion and emergency vehicles. Precise GNSS-assisted localization combined with V2X communication enables a wide array of ADAS functionality such as automatic braking if slowing traffic is detected ahead or truck platooning.

www.septentrio.com



RIEGL ANNOUNCES GEOCUE GROUP OEM PARTNERSHIP

Expanding their UAS / ULS presence in North America through this strategic OEM partnership, RIEGL is excited to welcome **GeoCue Group** to the growing base of renowned RIEGL integrators. Operating out of their United States headquarters in Huntsville, Alabama, GeoCue Group will further promote **RIEGL unmanned LiDAR innovations** through the introduction of their **True View 615** and **620 LiDAR/imagery fusion systems**, integrated with the newly introduced **RIEGL miniVUX-2UAV miniaturized unmanned LiDAR scanner**, an upgrade from the previously planned TrueView 610 with the miniVUX-1UAV with 100kHz pulse repetition rate (PRR) to 200 kHz. This solution offers surveyors an innovative LiDAR and dual oblique mapping camera configuration integrated in a single lightweight payload for use on commercial drone platforms. True View allows for fast, easy automated generation of true 3D colorized point clouds, oblique imagery and orthophotos from a single flight.

www.riegl.com

RIEGL VZ-400i TERRESTRIAL 3D LASER SCANNER



scan data of St. Stephen's Cathedral,
the reference for CAD line drawings

RIEGL WAVEFORM-LIDAR TECHNOLOGY FOR HIGHLY ACCURATE SCANNING RESULTS IN EXTREMELY SHORT TIME

- up to 40 high resolution scan positions per hour – **EXTREMELY FAST DATA ACQUISITION**
- suitable for highly complex and extensive environments (e.g. buildings, narrow tunnel systems, crested areas) – **PRACTICABLE VERSATILITY**
- 1 TByte SSD memory for more than 1000 scan positions – **ON-BOARD STORAGE FOR COMPREHENSIVE PROJECTS**
- automatic, reflectorless, extremely robust, and highly precise registration of scan positions – **HIGHEST ACCURACY OF SCAN DATA**
- web-based RIEGL software RiPANO for CAD connectivity – **FREE, USER-FRIENDLY MULTI-USER ACCESS EVEN TO LARGER SCAN PROJECTS**

Explore the full RIEGL product portfolio at
www.riegl.com



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

HEXAGON ACQUIRES OF COWI'S MAPPING BUSINESS

Hexagon AB, a global provider of sensor, software and autonomous solutions, announced the signing of an agreement to acquire **COWI's aerial mapping business**. COWI is an international consulting group within engineering, economics and environmental sciences with a mapping business that serves as Europe's largest provider of airborne surveying and spatial data processing and key partner of the HxGN Content Program. Bringing valuable expertise in capturing and selling **Content as a Service (CaaS)**, COWI's mapping unit has been delivering HxGN Content Program services in Europe since 2015. With approximately 400 specialists worldwide, the business provides public administrators, government organisations, infrastructure project stakeholders, utility companies and global internet companies access to the most relevant geospatial data during their planning processes.

www.hexagon.com

TRAFFIC4CAST COMPETITION REVEALS NOVEL WAY TO PREDICT TRAFFIC FLOW USING AI

The Institute for Advanced Research in Artificial Intelligence (IARAI), an independent global machine-learning research institute established by **HERE Technologies**, announced the results and winners of its traffic prediction competition, which aimed to solve mobility challenges using artificial intelligence (AI). **Traffic4cast**, a unique competition merging movie-prediction machine learning with traffic research, challenged competitors to understand complex traffic systems and make predictions about how they would flow in the future. The results show how AI can effectively uncover insights to **solve traffic gridlock through trial and error** of industrial geospatial data from HERE. Traffic comes about when drivers make simple decisions that lead to complex behavior patterns. These patterns depend on various factors, such as time of day, the road network, congestion situations, holidays, weather conditions and day of the week. Effectively identifying and analyzing traffic patterns lead to more accurate predictions of how traffic would move on given roads at given times of day. www.here.com



TDI-BROOKS PARTNERS WITH GEOTEK UK

TDI-Brooks has partnered with **Geotek LTD** in the UK to expand its non-destructive core scanning services offered to clients. In addition to its historical offering of **MSCL (Multi Sensor Core Logging)**, it can now offer **XRF chemostratigraphy, 2D X-ray radiography** and **3D X-ray CT (Computed Tomography)** services. Geotek X-ray radiography and CT services are conducted in line with ASTM D4552-14. A typical project would provide three 2D X-ray radiographs per core section at three orientations (0°, 45° and 90°), which allows for the 3D visualization of features within the core. The maximum core length accepted in Geotek X-ray machines are 155 cm, with a maximum outer diameter of 160 mm. X-ray radiography and CT provides valuable high resolution detail about the natural and artificial structure of core samples regardless of whether the material is still within its liner or exposed. X-raying has therefore quickly become imperative in order to save time and money, by providing geologists and engineers with the necessary information to make informed decisions about their core for future logging and testing programs. www.tdi-bi.com

VELODYNE LIDAR INTRODUCES VELABITT

Velodyne Lidar introduced Velabit, Velodyne's **smallest sensor** which brings new levels of versatility and affordability to 3D lidar perception. The Velabit leverages Velodyne's innovative lidar technology and manufacturing partnerships for cost optimization and high-volume production. The sensor advances Velodyne's mission to make **high-quality 3D lidar sensors** readily accessible to everyone. The Velabit perfectly complements Velodyne's sensor portfolio. The sensor delivers the same technology and performance found on Velodyne's full suite of state-of-the-art sensors and will be the catalyst for creating endless possibilities for new applications in a variety of industries. The compact Velabit can be embedded almost anywhere within vehicles, robots, unmanned aerial vehicles (UAVs), infrastructure and more. It is designed to be easy to manufacture at mass production levels.

www.velodynelidar.com



LEICA BLK2GO NAMED CES 2020 BEST OF INNOVATION WINNER

For the 2020 awards, the **Leica BLK2GO** was named a **CES 2020 Best of Innovation Award Winner** and the **Leica BLK247** was named a **CES Best of Innovation Award Nominee**, both in the category of Digital Imaging and Photography. Previous BLK products that have been named by the CES Innovation Awards include the **Leica BLK360** as a CES 2017 Innovation Award Nominee, and the **Leica BLK3D** as a CES 2019 Innovation Award Nominee.

An annual programme that celebrates outstanding design, the CES Innovation Awards recognises honourees across 28 product categories. An elite panel of judges, including designers, engineers and members of the tech media, reviews submissions based on design, functionality, consumer appeal, engineering and how the products compare with competition. Those products recognised as the Best of Innovation honourees received the highest ratings in their respective product categories. www.hexagon.com

VEXCEL IMAGING ACQUIRES GEOMNI IMAGERY DIVISION OF VERISK

Vexcel Imaging, a provider of aerial imagery data, large-format aerial cameras, and photogrammetry software, signed a definitive agreement to acquire the imagery sourcing group from **Verisk's Geomni business**. The acquisition will combine Geomni's imagery surveying and content-related teams and assets into Vexcel. Verisk, a data analytics provider, will be a minority owner in Vexcel with full access to all **aerial imagery libraries**. The combination of Geomni's fleet of fixed-wing aircraft and aerial operations, mapping business, and oblique aerial image library together with Vexcel's sensor business and data program will create a very strong geospatial data library. Geomni's analytics team and assets will remain part of Verisk and continue to focus on world-class advanced analytics. The team will work closely with Vexcel on a strategic road map and joint projects.

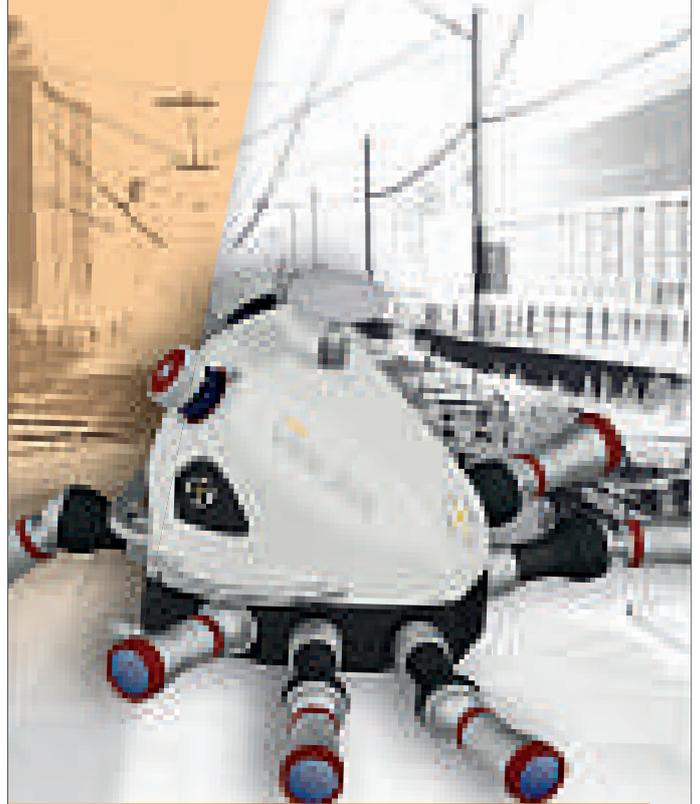
www.vexcel-imaging.com



SIMACTIVE ANNOUNCES NEW DRONE TRAINING PROGRAM FOR MAPPING

SimActive, a developer of photogrammetry software, announces a new training program for drone mapping. The program's goal is to provide educational material and resources on how to effectively process drone imagery, to both neophytes and experts. The new offering includes **educational documents, tutorial videos** and **monthly webinars** as well as tailored training sessions, which can be provided both online or on-site. All aspects of data processing are covered, such as the generation of DSMs, DTMs, point clouds, orthomosaics and 3D models. www.simactive.com

RIEGL VMX-2HA MOBILE MAPPING SYSTEM



RIEGL WAVEFORM-LIDAR TECHNOLOGY FOR HIGHLY EFFECTIVE DATA ACQUISITION AND EFFICIENT PROCESSING

- 2 MHz measurement rate and 500 scan lines per second – **HIGHLY ACCURATE, EXTREMELY DENSE POINT CLOUDS**
- High-performance IMU/GNSS system integrated – **PRECISELY GEO-REFERENCED SCAN DATA AND IMAGE DATA**
- Flexible combination of up to 9 different cameras including spherical camera – **MODULAR CAMERA SETUP CORRESPONDING TO PROJECT REQUIREMENTS**
- 10 GigE network and 6 TB SSD storage media for big data handling – **UNINTERRUPTED DATA RECORDING OF COMPREHENSIVE MISSIONS**
- Basic Configuration **RIEGL VMX-2HA-BC – EQUIPPED WITH SPHERICAL CAMERA ONLY**

Explore the full RIEGL product portfolio at www.riegl.com



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HEXAGON UNVEILS M.APP X 2020 FOR ENHANCED IMAGERY INTELLIGENCE

Hexagon's Geospatial division, a provider of location intelligence solutions, has launched **M.App X 2020**, the latest version of its cloud-deployable enterprise solution for imagery intelligence. It features new capabilities that enable users to more quickly display critical information and view the same map in 2D or 3D for better analysis. M.App X equips defence and intelligence organizations with tools that make imagery easier to interpret, create intuitive maps for actionable information and centralize geospatial data for instant access across an organization. The latest version adds **Hexagon's LuciadRIA**, a high-performance browser solution, as its mapping engine to improve hardware performance and support 2D and 3D displays of the same map. www.hexagon.com

AVINEON ACQUIRES TENSING INTERNATIONAL

Karlu Rambhala, Chief Executive Officer of Avineon, announces the acquisition of **Tensing International B.V.**, located in Waardenburg, Netherlands. As a GIS consulting company in the Netherlands, Tensing has helped clients succeed with a wealth of knowledge and experience in **Esri** and **Safe Software's FME Technology**. With a focus on innovation, client engagement, and high-end technical expertise, Tensing provides consulting services, project management, and GIS development and administration for clients across the Netherlands and beyond. Both an **Esri Gold Partner** and **Safe Software (FME) Silver Partner**, Tensing adds over 60 high-caliber GIS consultants to Avineon's global professional services team. With a shared focus on delivering value added services to clients, Avineon and Tensing will now combine experiences to collaborate on new initiatives that provide the most impact to global clients. www.avineon.com

SENSEFLY ENTERS 2020 WITH LANDMARK SHOW OF SUPPORT FROM PARROT

senseFly, through its parent organization **Parrot**, has recapitalized its balance sheet and funding, guaranteeing a healthy operational outlook as it continues its growth path as the global leader in fixed-wing drones. The financial backing comes at a particularly meaningful time for senseFly - an **Ecole Polytechnique Fédérale de Lausanne (EPFL)** spin-off - which celebrates its 10th anniversary this year. Since its inception, senseFly has flown over **1 million flights**, mapped an estimated **500,000 square kms** and generated over **USD \$ 100 million** in revenue. This important milestone sees senseFly's status shift from promising start-up that pushed the boundaries of remote mapping to leading manufacturer of professional fixed-wing drones used by some of the world's largest organizations, including Trimble and Microsoft. www.sensefly.com



HANDHELD INTRODUCES SMART MDM SOLUTION FOR IMPROVED EFFICIENCY

Handheld Group, a supplier of rugged mobile computers, announced the release of **MaxGo Manager**, a free **Mobile Device Management (MDM)** software solution for Handheld Android devices. The MaxGo software suite is designed to facilitate easy staging and security configurations for Handheld's Android customers. MaxGo Manager allows Handheld Android users to, through remote access, easily configure, manage and support all of their devices in one location. Within the software, users can customize configurations including installing and removing apps on their field-devices, updating operating systems, changing system and client settings, and running staging scripts. The MaxGo Manager solution is a multi-user system that allows different managers to be assigned varying permission levels. The MaxGo Manager solution features a parent-child hierarchy: Device managers can apply general settings at a high level, then specify unique configurations within subordinate groups. Users can also set up new devices automatically, simply by adding them to a desired group. www.handheld.com

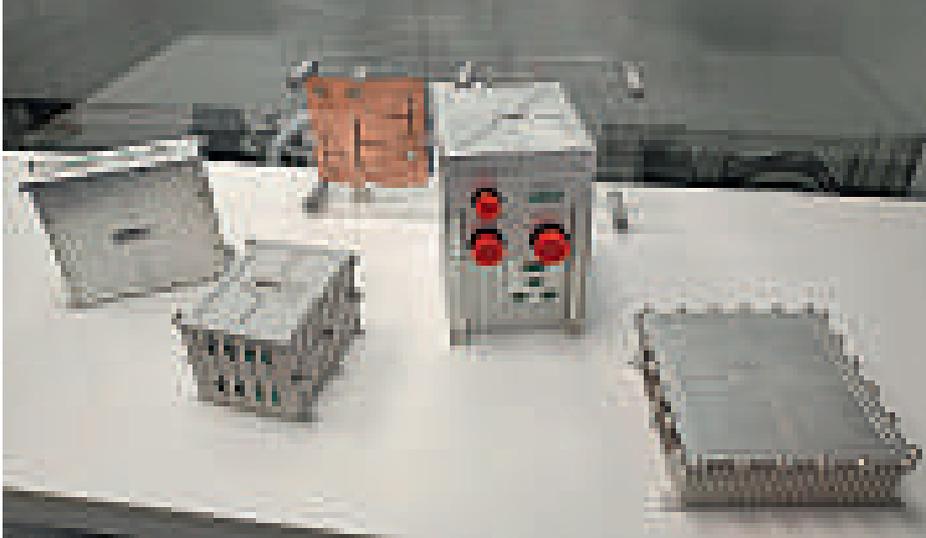
ELBIT SYSTEMS LAUNCHES A NANOSATELLITE FOR COMMERCIAL COMMUNICATION APPLICATIONS

Elbit Systems announced that **NANOVA**, the Company's nanosatellite was successfully launched to space. NANOVA was developed in collaboration with a U.S. company as part of the BIRD foundation initiative and is planned to be a part of a nanosatellite constellation for commercial purposes. NANOVA will be operated from a ground control station set up at the Company site in Haifa, Israel. The NANOVA nanosatellite was launched from the Satish Dhawan Space Centre in the South of India, onboard the Polar Satellite Launch Vehicle. NANOVA was set out to its orbit 18 minutes from launch at an altitude of 580 km. NANOVA is a 3U (the size of a juice carton), 5kg CubeSat that hosts an Ultra High Frequency (UHF) communication payload providing a direct satellite link for data, voice and text messaging. www.elbitsystems.com



GMV'S AVIONICS SYSTEM WILL BE INTEGRATED INTO THE MIURA 1 OF PLD SPACE

After a long field-testing campaign, the **GMV-developed avionics system** for PLD Spaces' MIURA 1 launch vehicle has successfully passed its **Qualification Acceptance Review (QAR)**, clearing it for fitting in this suborbital launch vehicle, one of the essential prelaunch conditions. Since 2017, GMV has been working on the design, development and qualification of a complete avionics system for the space probe MIURA 1. This system takes in all vital avionics items for a classic launcher, such as the power subsystem; data management subsystem; guidance, navigation and control (GNC) system; onboard software; payload management; telemetry plus the autonomous tracking technology and the termination system. Key features of the avionics system designed and developed by GMV in collaboration with PLD are its modularity and scalability. Other fundamental aspects are its use of COTS parts and the availability of advanced technology that guarantees the required performance at an affordable cost. www.gmv.com



HERE TECHNOLOGIES WELCOMES NEW INVESTORS

HERE Technologies announced that **Mitsubishi Corporation (MC)** and **Nippon Telegraph and Telephone Corporation (NTT)** of Japan are to jointly acquire a 30% ownership stake in the company. The companies are co-investing in HERE via their newly established, jointly owned holding company **COCO Tech Holding B.V.** in the Netherlands. The transaction is expected to close in the first half of 2020, subject to regulatory approval. The parties have agreed not to disclose the financial details of the transaction. HERE is a **location data and technology platform**, providing a development environment (HERE Workspace), a data exchange (HERE Marketplace), map creation and visualization capabilities (HERE Studio) and a set of location services (HERE Location Services). These capabilities leverage the Reality Index, a rich source of location contextual data that captures relationships between places and things. The company has more than 9,000 employees across 56 countries. www.here.com