

Mensura

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KOREC is growing!

UK expansion is the driving force behind an internal KOREC restructure which will see us move to a more personal approach to customer relationships with the establishment of four regional sales teams.

Each of the new teams will be led by key KOREC personnel in the newly created positions of Regional Sales Directors. Taking up these positions, from left to right below, are: Neil Pollock – North East Region, Jared Pogmore – West Region, Chris Harris – London and the East Region and Ryan Bowles – South Region.



▲ Neil Pollock, Jared Pogmore, Chris Harris and Ryan Bowles

continued on back page...

Intergeo Trimble releases

Trimble has traditionally used Intergeo to announce product releases and software enhancements and this year was no exception. Here's our round-up:

Trimble C-Series

These new Trimble mechanical total stations, the C3 and C5, are durable, efficient, highly precise instruments and also the lightest on the market at just 4.5kg! However, it's the C5 that's really caught our attention – as well as being L2P (Locate2Protect) ready, expect superior Nikon optics, a 5000m range, autofocus as standard and Trimble Access onboard software.



Trimble T10 Tablet

Whether you want to use the T10 tablet to control the Trimble S Series total stations or Trimble SX10 scanning total station, capture field asset data or run demanding desktop applications, it won't disappoint with its generous 25.5cm screen, integrated GNSS, high resolution graphics and IP-65 military grade ruggedness.



Rivalling the best in this field, the T10 supports the latest Windows® 10 operating system, has a detachable keyboard option and handles complex, data-hungry applications with ease which means you won't need to carry a separate laptop computer in addition to a survey controller or data collector. ■ ■

continued overleaf...

Stop Press: Seven Trimble Catalyst systems sold in seven days
Trimble Advanced Drafting now included in TBC v4.0 Advanced Edition

Intergeo releases continued...

Trimble Business Center 4.0



This version includes new capabilities to process high-accuracy GNSS data with confidence, create CAD deliverables and have full data traceability throughout the project lifecycle. It also extends the survey CAD capabilities including text editing, ortho drafting and coordinate geometry (COGO) tools whilst a new History Log feature captures all data changes throughout the project, from GNSS processing to CAD deliverable, all useful for greater workflow transparency and data traceability.

Trimble Business Center version 4.0 also includes direct integration with Trimble Clarity.

Trimble Clarity

Until Trimble Clarity, there was no easy way to share survey project data with clients. This new, cloud-based software can be used by anyone and enables surveyors and those unfamiliar with engineering software to easily view, use, and share rich project data and imagery in a web browser. Included as part of the new TBC version. ■ ■ ■



▲ Share survey project data with Trimble Clarity

Rail – Trimble Gedo family extended

Trimble's new IMS system adds a high specification IMU to the well proven Gedo 2.0 TMD family. The new system promises increased productivity in a power-efficient, lightweight and user-friendly package.

Along with the new IMS hardware and software, Trimble has also been hard at work updating its Gedo Scan office software with a variety of new features including automatic shape tracing algorithms.

Additionally, new Trimble Novatrack software allows designs to be calculated from information surveyed with the Gedo 2.0 TMD and then used for setting-out or tamping with the Gedo system.

KOREC's Rail and Monitoring Manager, Matthew Lock, is looking forward to introducing these brilliant new systems into the UK rail markets and can be contacted at matthew.lock@korecgroup.com ■ ■ ■



▲ Now with 3D point cloud analytics

Trimble eCognition v9.3

The latest version of eCognition (object-based image analysis software) adds 3D point cloud analytics and deep learning technology which means a broader range of geospatial analysis with a greater level of control. ■ ■ ■

Trimble Access v2017.10



The newest version of Trimble Access has been optimised to support the new Trimble C-Series total stations and of course the new Trimble T10 tablet, both of which we feature on our front page. ■ ■ ■

Please contact your KOREC Sales Consultant for further information on any of these products.

Introducing Trimble's High Rise App

Introducing Trimble's High Rise App

How do you solve the problem of constructing a tall building truly vertical, compensating for the sway and tilt the building core experiences throughout the process, and with minimal surveying downtime between floor lifts?

Trimble's High Rise App solves this problem by taking position readings from satellite based GNSS receivers, angles and distance measurements from total station observations and tilt measurements from tilt meters, which are automatically combined into a single solution.

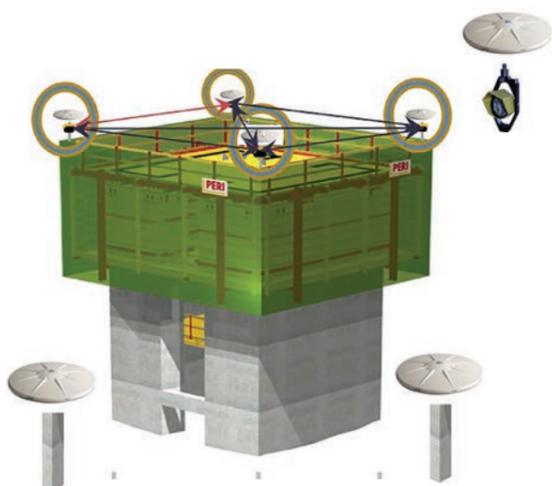
These readings are available real-time to the surveyor at the working floor.

The tilt metres and GNSS receivers are integrated with the total station observations via a realtime Trimble software engine and delivered to the handheld controller as part of the instrument set-up process, enabling the surveyor to establish new survey control at the start of each lift, or on demand, rapidly and efficiently.

This is proven Trimble technology and significant installations include the 1000m Kingdom Tower in Jeddah, due to be the tallest building in the world, the 462m Lakhta Centre in St Petersburg and the tallest building in Europe.

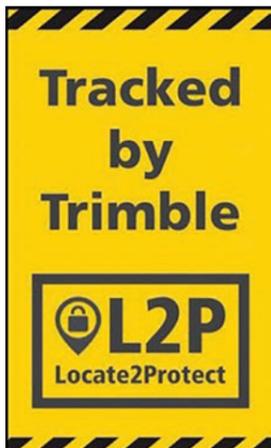
To find out how it works ask for our pdf or contact matthew.lock@korecgroup.com for a demonstration.

We have a KOREC hosted Trimble High Rise App webinar coming soon. Details will be posted on our website events section. ■ ■ ■



▲ How to get good control of the total station setup? Solution: GNSS antennas and co-located prisms

In custody - Trimble L2P delivers



Tackling instrument theft the recommended way

Less than 1% of instruments sold are reported as stolen but in a manufacturer's survey of 100 UK surveyors, 40% reported being affected by instrument loss! – a big disconnect.

At last year's GeoBusiness Conference, the TSA chaired a discussion to debate how best the industry can tackle the growing problem of stolen equipment including discrepancies like the one above. The aim was to have an open forum and during the debate several recommendations were put forward. Amongst these were basic suggestions such as using technology to protect equipment, ensuring that all serial numbers and identifiers can be accessed quickly and reporting stolen kit immediately to get a crime number to assist visibility and recovery.

Here at KOREC we can look back over the 18 months that have passed since this debate and note that we have had much positive feedback from customers using Trimble's L2P technology. L2P (Locate2Protect) provides real-time equipment monitoring and all new Trimble S-Series Total Stations come with L2P built-in. We've had one customer report an

instrument being located within just 30 minutes of its theft and another report how he was able to track his stolen instrument 'live' and then locate it almost immediately when it came to rest in a ditch a short distance from the site.

However our latest customer report is a very useful example of how this type of technology can assist in instrument recovery. Just last week we received a call from a customer working in East London who informed us that following the theft of a Trimble S-Series total station, he was able to log in to the L2P portal and monitor its progress until it finally came to rest. Using Google Maps he pinpointed the location as a storage centre whilst Street View revealed a CCTV camera covering the entrance.

Our customer immediately informed the police and called us to establish serial numbers. As a direct result of L2P technology, the police recovered over 40 stolen items, including several survey instruments. Using the L2P report, the police could establish when the instruments arrived at the lock-up enabling them to find the visual evidence they needed on the CCTV footage to take somebody into custody. The customer has requested L2P tracking for the rest of the company's fleet. ■ ■ ■

K-Mobile Updates

The latest developments from our KOREC software development team include:

"Bull's eye" navigation!

For use in conjunction with the Trimble Catalyst correction service, this new K-Mobile Android feature allows for cm accuracy navigation as opposed to the 5m available previously (restricted by the device's built-in GPS).

This feature is ideal for navigating to previously mapped 'lost' or underground features such as gullies hidden by undergrowth, valves on buried pipes and assets under flood water and it's even sufficiently accurate for setting out.

K-Portal – sharing point cloud data

As part of our work with KOREC's K-Services team (undertaking customised mobile mapping surveys) K-Portal, a hosted, cloud based solution for the live monitoring of a project's progress and the assignment of work orders, can now host point cloud data for anyone who wishes to share this data with their customers free from the need for specialised software, training or handling gigabytes worth of data.

If you're interested in sharing point cloud data with your customers, please do get in touch with us through paul.brodin@korecgroup.com ■ ■ ■

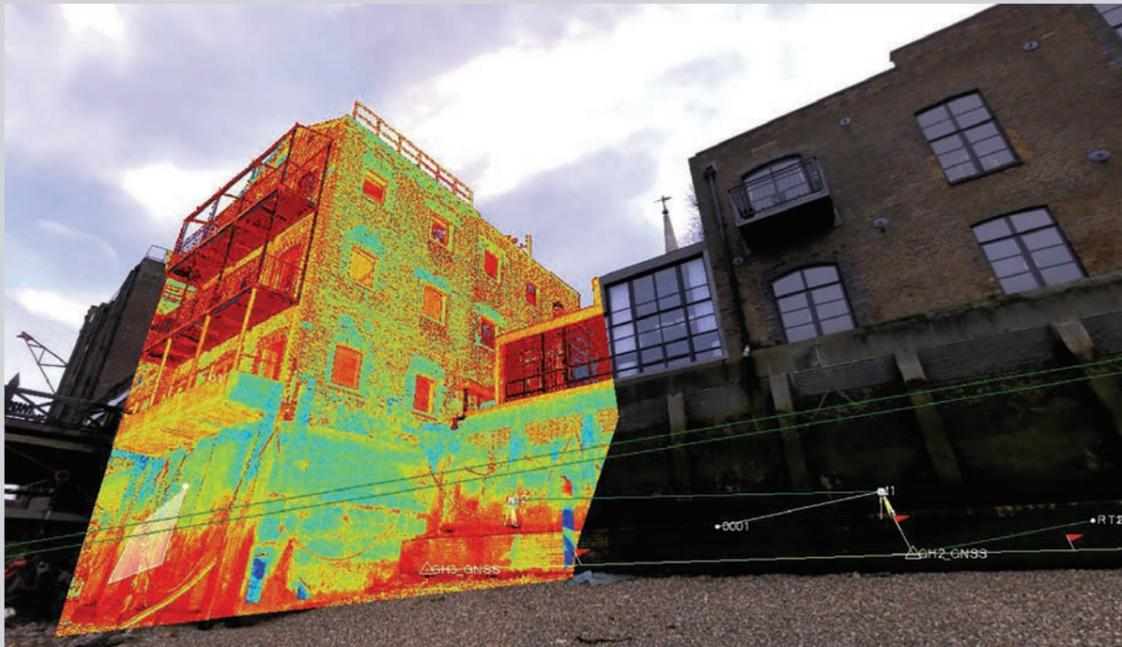


▲ "Bulls eye" navigation



▲ Share your point cloud data

Tackling time constraints with the Trimble SX10



Under the guidance of Engineering Manager Jordan Knight, The Greenhatch Group has thoroughly tested Trimble's assertion that the SX10 Scanning Total Station is the most innovative survey product it has ever engineered.

The Greenhatch Group can trace its origins back over 30 years and today operates through 3 regional offices employing more than 70 staff. With its core business being topographical and measured building surveys it depends upon the reliable performance of its optical, laser scanning and GNSS instrumentation and reviews its fleet regularly to ensure that Greenhatch surveyors are equipped with the best tools for the job.

Greenhatch buying decisions are based on extensive trials backed up by feedback from the site team and this proactive approach has seen Greenhatch recently switch away from its original correction service and GNSS supplier replacing it with Trimble's VRS Now correction service and KOREC supplied Trimble R10 GNSS receivers. Consequently, the group is aware of technological advancements within the survey industry and was one of the first to arrange for a trial of Trimble's SX10 Scanning Total Station.

Trialling the SX10

At the end of 2016, Group Director Neil Jefferies attended the launch of the SX10 at Trimble's Las Vegas Dimensions event and on his return to the UK tasked Greenhatch Engineering Manager, Jordan Knight, with a full examination of the instrument.

Greenhatch has been involved in 3D laser scanning since it first became commercially available within the industry. The company has a range of laser scanners including HD, compact and hand-held and Jordan was keen to assess what the SX10 could bring to its existing laser scanning services. The SX10 was therefore hired over several weeks and used to undertake a number of projects. One of these jobs was located at an old RAF base in Gaydon where a new test track was being laid for the testing of Jaguar Landrovers. The track required scanning for material quantities and again when work was finished. The initial scan was carried out using an existing Greenhatch 3D laser scanner and the second one with the SX10.

"What we noticed first on this trial was the scanning speed of the SX10 which enabled us to double our work load," explains Jordan. "In the time it took us to scan 600m with our existing scanner, we had carried out 1200m with the SX10. Speed is a big factor for us because we often get last minute requests from clients and with the SX10 we will be better equipped to respond to these needs simply because we can undertake the work so much faster. For example, we can now carry out an as-built scan in 12 minutes rather than half a day."

Jordan continues, "We were also struck by how easy the SX10 is to use. One of our team, who has never used Trimble before, picked up the workflow in just 5 minutes! The transition for non-Trimble users is a straightforward one thanks to the intuitive nature of the Trimble Access

software which runs on the tablet driving the SX10."

Jordan tested all aspects of the SX10's functionality and was impressed by the quality of the imaging and the benefits that being able to scan and traverse at the same time would bring. On a practical level, because the SX10 combines high speed 3D laser scanning and high accuracy total station measurements, the Greenhatch team could undertake many jobs with just a single instrument. This would enable Greenhatch surveyors to be more flexible on site and carry less kit in their estate cars.

Jordan also states that an added benefit is how much SX10 technology reduces the file sizes he has to deal with. "Typically, we'd expect 30 scans using the SX10 to generate around 1.75GB of data, that's the equivalent amount of data that just two scans would generate with our existing scanner! The smaller file sizes mean that we can Dropbox projects to the office where processing can begin immediately – great news for our clients who need data quickly."

Jordan concludes, "What stands out is the quality of data from the SX10 and the speed with which it scans. We were about to buy a new scanner just before the SX10 was launched and I'm glad we held off. Leica's Multistation simply doesn't compare because it doesn't feel like a scanner. The SX10 feels far more complete. Even when we use the SX10's coarse option for a full dome scan, the result is good enough for us to draw from and of course we have the photos to back it up as well. This is something that's been particularly useful in a recent rail job that required us to scan 30 gantries with a very tight deadline."

"The industry has been crying out for an instrument like the SX10 and it's a benchmark for everything else and everyone else to compete with. It really does offer double the range, twice the productivity and half the kit. Additionally, we've had excellent support from KOREC. We were new to the instrument and KOREC technical support has dealt with any queries incredibly quickly, something we rarely see from other suppliers. The SX10 is best described as productive, fast and complete, all our surveyors want to get their hands on it!"

After the initial trials and following positive feedback from Jordan and the Greenhatch surveyors, an SX10 was purchased in early 2017 and has since been used on a wide range of projects:

Case Study: Tackling time constraints on the Thames

For Greenhatch, providing a high quality of service within tight time constraints is an on-going challenge, whether those time constraints be imposed by the client, by a rail blockade, traffic management or even the forces of nature. On a current project, it is the forces of nature that Greenhatch must contend with in the shape of the Thames tide and it is this limited period of access that has provided just the sort of challenging site conditions that Jordan seeks to meet with the Trimble SX10.

During a routine laser scan on a building alongside the Thames, it was noticed that the brick work of an abutting property was bowed. The leaseholder contacted Greenhatch to undertake the monitoring of the bowed building, annually, over a 5 year period. Whilst the leaseholder had proposed undertaking the work with a traditional approach, monitoring by total station was ruled

out because there was, as yet, no indication as to where the targets should be placed. Greenhatch Engineering Manager, Jordan Knight, therefore suggested a 3D laser scan as the best methodology with the initial scan being used as base data. However, work would have to be undertaken from the beach which uncovered some new challenges. Access was by slippery steps, scan time on the beach would be restricted because of the tide and control had to be established outside the zone of influence. Jordan's solution was to use the SX10 to improve productivity on this project in two key areas, establishing control and making best use of scan time on the beach.

Establishing control with the SX10: Using the SX10, Jordan was able to come off the external control well outside the zone of influence which means that each time he returns to the site he can go directly to the same control saving time, and giving better accuracy and

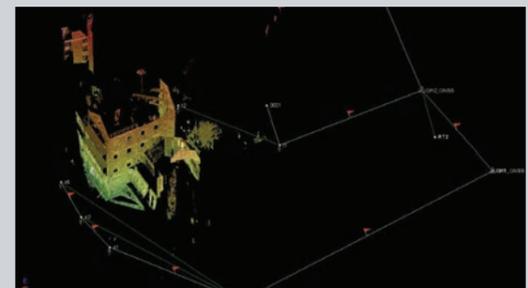
"Double the range, half the kit, twice as productive"

Jordan Knight,
Engineering Manager

repeatability. Without the SX10 a separate scanner and total station would have been required taking much longer and increasing the probability of error in precision.

These stations were also statically controlled using a Trimble R10 GNSS and would be used for gathering further monitoring

observations on each return to the site. An added bonus was that they could reduce the instruments they needed on the beach by one.



▲ Establishing control and scanning in one hit!

Selective scanning from the beach: Traditional laser scanners often capture significantly more data than required and for Greenhatch, Jordan estimates this amount to be around 40%. He therefore decided to scan selectively to speed up the process. The SX10 is driven by Trimble Access software on a tablet which means no eyepiece is necessary. This also means that Jordan could simply draw a polygon on the live video feed on the tablet which would allow him to define both the area to be scanned and the scan density. With the tablet, he also had a clear visual of the scans that he had undertaken which meant he did not have to wait until he was back in the office to register the scan and check that nothing had been missed. Instead, whilst still on the beach, he was able to spot immediately that on the eastside of the building more data was required due to an overhanging balcony obscuring the brick work behind it. The total station functionality of the SX10 was used to shoot some reflectorless measurements, for example, on a window reveal, to cross-check with the scan data.



▲ On the edge of the Thames with the Trimble SX10

In the future, thanks to the 600m range of the SX10, Jordan will also be able to scan the building from the other side of the river.

Back at the office the registered scan was dragged and dropped into Trimble Business Center software where it was coordinated to an OS grid and Jordan drew the client's required contours to show the deviation and reflection on each accessible façade. ■ ■



KOREC News

Trimble Catalyst is here!

We are pleased to announce that Catalyst has arrived and is selling fast. We are now booking demonstrations with immediate shipping on orders.

Com everywhere and for everyone - Trimble's Catalyst is a software defined GNSS receiver designed to run on select Android phones and Tablets and is offered as a subscription based service. It acknowledges the needs of those outside of the geospatial industry who have a requirement for affordable centimetre, decimetre, submetre and metre accuracy positioning.

Call 0345 603 1214 to book your demo. ■ ■ ■



▲ Trimble Catalyst

Technical news

Trimble Access Tip

COGO and Key In functions are used to create new data within Trimble Access. Often existing points in the job are used with these functions, sometimes though new points need to be measured whose only purpose is to be used as part of the calculation.

This is when Fast Fix is useful. Tapping on the right arrow adjacent to a coordinate entry field will reveal Fast Fix. Selecting Fast Fix will cause a fast measurement to be made at the current location using an auto point name and the existing measurement settings. A rapid and convenient way of measuring positions for input to COGO or Key In tasks.

RealWorks tip

A small RealWorks tip for cloud to cloud registration. If using cloud to cloud registration the moving cloud doesn't move to the position and orientation expected, it might be because its scan station is forced levelled. When in registration mode the folder colour illustrates the scan station status. Green is over a known point and levelled, blue is levelled and yellow is not levelled. The status can be changed by using the instrument levelling button on the Survey Workflow section of the Registration ribbon. In this instance the instrument (an SX10) had been suspended upside down to acquire the scan which wasn't playing ball initially during cloud to cloud registration. Setting it's status to unlevelled allowed it to move into position during the registration.

Name
JL1
JL2
JL3

Galileo support for Trimble VRS Now

Trimble has announced that its VRS Now correction network can now process Galileo observation data bringing visibility to more satellites, improving the accuracy and reliability of corrections and positioning integrity. View our at www.korecgroup.com/news/videos-2/ in the **KOREC** Training section.

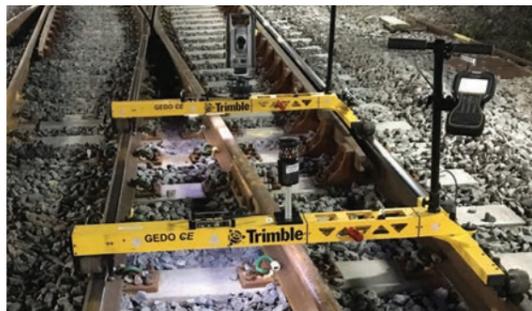
KOREC Training

Our website has a dedicated training area - please visit www.korecgroup.com/training for a full timetable of our training courses.



KOREC aids rail success

S&C achieves 100% track quality with Trimble GEDO Vorsys solution



We are delighted to report that **KOREC** supplied Trimble technology, in the form of the Trimble GEDO Vorsys solution, has played a major part in the S&C South Alliance* achieving 100% track quality at Willesden, North London, on both the up and down slow lines. Our thanks to Steve Naybour, Head of Transformation at Network Rail for issuing a statement that singled out the **KOREC/Trimble** rail team:

100% track quality is a tremendous achievement by South Alliance and also reflects the time and effort put into looking after and supporting Trimble GEDO Vorsys by **KOREC's** Matthew Lock (Rail and Monitoring Manager), Tom Williamson (Rail Support) and Trimble's Matt Moss (Rail Applications Engineer)."

The Trimble GEDO Vorsys solution comprises the twin-TMD hardware along with field and office software and provides adjustment data to tamping machines quickly and efficiently in the field. It helps avoid costly idle time for ballast tamping machines and work crews as well as providing as-built QA data to aid line-speed handback.

*A partnership between Network Rail, Colas Rail and AECOM responsible for all major rail works involving switch and crossing installations in the south of the UK. ■ ■ ■

KOREC golden ticket winners

Congratulations to the lucky draw winners of our 6 'Golden Tickets' to visit the Trimble SX10 factory in Sweden.

On the two day trip to Sweden will be:



Tim Connolly - Reencon, Chris Edge Glanville Group, Anthony Fleet- Clugston Survey, Michael Golding - Amey, Paul Williams - Sumo Services and Nick Giles, Morgan Sindall. ■ ■ ■

Monitoring

KOREC's new monitoring installation is now 'live' at Huntingdon

As part of our commitment to the UK monitoring market, we have been working closely with Trimble to install a real-time monitoring setup at the **KOREC** Huntingdon office. This currently comprises a Trimble S5TiM Total Station connected to a Settop M1 communications hub sending data into Trimble T4D monitoring software. We will also be adding additional sensors to the system.

We are now equipped to demonstrate the various elements of a typical monitoring installation and if you'd like to visit our Huntingdon location to see this system in action, please contact matthew.lock@korecgroup.com ■ ■ ■



▲ The monitoring team admires its set up at Huntingdon

Growing KOREC

...continued from front page

Additionally, each regional team will consist of dedicated sales consultants and pre-sales field support whilst also drawing on all of **KOREC's** nationwide services including the award winning workshop and of course the office based technical staff.

This new sales team structure reflects **KOREC's** commitment to placing the customer central to every part of the sales process. These teams will react quickly to customer requests and offer a more personal approach on which to build partnerships and long term relationships. Director involvement at a local level will ensure that **KOREC** customers have one step access to a key senior contact within their area.

Additionally, Mark Poveda has been appointed Group Commercial Director stepping up from his previous role as Sales & Operations Manager.

Mark has been with **KOREC** for over 15 years and brings considerable technical survey and sales expertise to this position which will see him working closely with the newly appointed Regional Sales Directors.

Regional expansion will also ensure that **KOREC** can offer those within the company, and those exploring opportunities with the company, a range of rewarding career paths. ■ ■ ■

Contact us:

For further information on any of the products or services mentioned in Mensura, please contact your nearest **KOREC** Sales Consultant or visit our website

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www.korecgroup.com

KOREC Diary

Events

Digital Construction Week, ExCel London, 18-19 October 2017

GeoDATA London, ILEC Conference Centre, 30th November 2017. Register at www.geoaware.info/venues

Commerical UAV Show, Excel London, 15-16 Nov. 2017

Webinars

If you miss one of our webinars, they can all be downloaded at a later date from our YouTube **KOREC**GROUP channel.

Coming soon - Trimble High Rise App

Catch up - Trimble SX10: <https://youtu.be/fWEi2fkuYrg>

Stay in Touch

