GroundProbe®

GROUND BREAKING NEWS

October 2016

INTRODUCING **SSR-VIEWER 8.4** AND **GEOEXPLORER**

decision confidence™

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CEO UPDATE: **LAUNCH OF SSR-VIEWER 8.4**

In our latest edition of 'GroundBreaking News', we are proud to announce that we have launched SSR-Viewer 8.4, a major update to our SSR-Viewer software platform with a number of significant advances.

For the first time, the software release supports all of GroundProbe's Slope Stability Radar technology solutions, allowing all SSR data to be viewed, analysed and reported on through one software platform. It is compatible with Series-2 and Series-3 radars, including: SSR-XT, SSR-MT, SSR-FX, and SSR-SARx, in both mobile and fixed installations.

In other exciting news, we have partnered with NavStar, a specialist developer and market leader of geotechnical data aggregation software and systems, to give our customers access to their intuitive platform, GeoExplorer. GeoExplorer is fully compatible with GroundProbe's new SSR-Viewer 8.4 software, allowing customers to seamlessly sync their slope data between the two platforms.

I look forward to telling you more about the features and benefits of our latest software release and our new, exciting partnership with NavStar.

John Beevers

MD and Chief Executive Officer

SSR-SARx DEPLOYED AT NKOMATI MINE

Having previously purchased an SSR-X (Series-1) in 2008 as well as an SSR-XT (Series-2) in 2010, Nkomati Mine in South Africa once again sought out GroundProbe when requiring a slope stability radar solution capable of long-range wall monitoring for their Nkomati Mine.

Requiring an SSR that met the risk management monitoring requirements of the expanding mine operation whilst providing light data at fast speeds and at an unrivalled resolution, GroundProbe were happy to offer two of their newest radars, the SSR-SARx.

With the longest range available in the market today, the SSR-SARx can monitor out to 4.5 kilometres with 50 per cent more resolution than any other SAR system and with pixels of 0.083 degrees by 70 centimetres as well as a two minute scan time, SSR-SARx was the natural choice for Nkomati Mine.

In addition, the system also includes GroundProbe's renowned intelligent signal processing power, allowing SAR data to be processed at the radar in order to maintain the smallest possible file size for easy, seamless transfer over mine Wi-Fi networks.

This feature gives no delay in data, meaning every scan is completed and processed in two minutes ready for viewing and alarming, providing Nkomati Mine with the best risk management and safety critical monitoring systems available.

"We are proud to be the only company in the world that now offers all Slope Stability Radar technologies, 2D and 3D RAR, and now 2D SAR, all using the same software SSR-Viewer, giving customers the productive edge they need in today's operating climate," said John Beevers, GroundProbe's Managing Director and Chief Executive Officer.

GROUNDPROBE ANNOUNCES PARTNERSHIPS WITH NAVSTAR

GroundProbe has forged a new relationship with NavStar, a specialist developer and market leader of geotechnical data aggregation software and systems. Through this partnership, GroundProbe customers now have access to NavStar's GeoExplorer platform and its accompanying GroundProbe module.

Since 2008, NavStar has been providing monitoring solutions to clients around the world. With products that are designed to improve safety and productivity, NavStar were a natural fit for GroundProbe to partner with.

"NavStar has gained an excellent reputation with their customers from a proven track record of delivery," said Lachlan Campbell, GroundProbe's VP of Marketing and Technology.

"Already leaders in their field, it made sense for us to leverage from their experience and expertise and allow our customers to access their tried and tested GeoExplorer software."

GeoExplorer will seamlessly sync with GroundProbe's new SSR-Viewer 8.4, providing a data integration solution that offers new ways to view, interact and report on data through single-platform, real time monitoring. Furthermore, the versatile software platform integrates data from an extensive range of slope stability monitoring hardware including radar, GPS, laser, satellite InSAR, total stations, piezometers, accelerometers, and much more. Radar displacement values can be graphed alongside prism displacements, water pressures or any other set of monitoring data, providing single-platform, real time monitoring on one screen.

Glen Bjorgan, NavStar's founder, spoke of the importance of designing the GeoExplorer platform with a top-down approach by starting with the big picture and breaking it down into smaller components, combining a highly-regarded user interface with powerful capabilities.

"We make every effort to think from the user's perspective and to keep the software as simple as possible, leaving complex tasks behind the scenes," Mr Bjorgan explained.

"Our dedicated team of software developers aimed to simplify the integration of many slope monitoring systems into a single platform. The result is an advanced, flexible, high-performance solution."

NAVSTAR

NAVSTAR'S GEOEXPLORER PLATFORM AND GROUNDPROBE MODULE

GeoExplorer and the accompanying GroundProbe module provides a myriad of data collection and reporting features to help maximise slope stability assessment and review.

The GeoExplorer platform provides one dashboard which seamlessly syncs with GroundProbe's SSR-Viewer 8.4 through the GroundProbe module, allowing customers to view data from multiple radars on the one screen.

"One of the most intuitive features of the module is that historical and current radar data can be viewed alongside each other on the dashboard, allowing you to analyse and interact with data on any point along the timescale, even if you have relocated or reset your radar," said James Usherwood, GroundProbe's Product Development Manager.

The GeoExplorer platform also provides Front View and Plan View displays of slope stability data, allowing for increased flexibility in choosing the display that best suits your needs.

"SSR-XT customers, who view their data through our patented Front View display in the SSR-Viewer software, will now also be able to view their data in Plan View through the GeoExplorer dashboard."

GeoExplorer also supports multi-user functionality meaning it can be run simultaneously by multiple users both on and off site.

"In order to ensure all users are getting the most up-to-date data at all times, changes are made in real time and reflected for all users, optimising the decision-making process," said Mr Usherwood.

Furthermore, additional GeoExplorer modules allow you to integrate measurements from other monitoring hardware, such as total stations and GPS sensors, with data from the GroundProbe module. This single-platform approach enables you to interact with all your monitoring data in the same way regardless of the technology used to collect it.

Navstar's GeoExplorer software provides an intuitive platform from which to review, assess and compare a wide array of different data types all within the one dashboard whilst seamlessly syncing slope data with GroundProbe's own SSR-Viewer software.

GEOEXPLORER FEATURES, BENEFITS AND ADDITIONAL MODULES

GEOEXPLORER FEATURES AND BENEFITS

ONE DASHBOARD FOR MULTIPLE RADARS

Seamlessly syncs with SSR-Viewer 8.4 allowing customers to view data from multiple radars on the one screen.

CURRENT AND HISTORICAL DATA MERGE

View historical and current radar data alongside each other on one dashboard.

FRONT AND PLAN VIEW FLEXIBILITY

Flip between Front View or Plan View displays of radar data.

MULTIPLE USER FLEXIBILITY

Run simultaneously by multiple users both on and off site.

GEOEXPLORER ADDITIONAL MODULES

FLEXIBLE INTEGRATION OF MULTIPLE SENSOR TYPES

A single software dashboard for all hardware and data monitoring.

ALARMS TAB

Set standardised alarm triggers across many sensor types.

DRAG AND DROP REPORTING

Customise reports comparing data from different sensor types.

GROUNDPROBE'S SSR-VIEWER 8.4 FEATURES AND BENEFITS

THIS NEWEST RELEASE IS PACKED FULL OF NEW FEATURES THAT OFFER A RANGE OF EXCITING BENEFITS TO OUR CUSTOMERS.

SSR-Viewer 8.4 contains over 50 enhancements and new features. Here are a few highlights. For a full list of features please contact GroundProbe to see our release notes or to get your upgraded copy of SSR-Viewer.

SOFTWARE THAT UNIFIES ALL HARDWARE

For the first time, the software release will support all of GroundProbe's Slope Stability Radar technology solutions, allowing all SSR radar data to be viewed, analysed and reported on through one software platform. It is compatible with Series-2 and Series-3 radars, including: SSR-XT, SSR-MT, SSR-FX, and SSR-SARx, in both mobile and fixed installs.

ATMOSPHERIC CORRECTION IMPROVEMENTS

Our new Dynamic Stable Reference Areas algorithm allows the radar to dynamically remove the pixels that are rapidly changing and inherently unstable or corrupted by real movement of objects on or near the slope.

Significantly improving the user experience, the radar dynamically modifies the stable reference area from scan to scan, requiring minimal user input to keep the atmospheric correction under good configuration parameters.

ENHANCED DEFORMATION ALGORITHM

Using a similar technique to SSR-XT, the enhanced deformation algorithm is now available for SSR-FX and SSR-FM, helping better manage ambiguous data. The cleaner and more reliable data allows for more confident decisions.

DRAG AND DROP CUSTOM ANALYSIS

The new custom analysis tab provides you with the ability to customise the way you want to analyse data. This new drag and drop feature allows you to view multiple types of radar data on a single chart to better understand and quickly assess your slope, the weather conditions or your radar's performance. The size of the vertical axis is now completely configurable, making the plots even more useful for reporting. Diagnostics can now also be viewed on a single chart in a similar manner.

SELECTABLE PANORAMIC IMAGE

Instead of taking a full panoramic photo collage for each new wall setup, you can now select specific shots for the SSR camera to capture, on which the final scan area can be selected. This new feature allows for much faster creation of walls, saving you valuable time in the radar set-up process.

ENHANCED SAFETY-CRITICAL MONITORING FEATURES

Based on customer feedback, SSR-Viewer 8.4 introduces a range of improvements to its safety-critical monitoring features, again raising the benchmark of safety in the mining industry with improved functionality that provides greater peace of mind.

IMPROVED HARDWARE RELIABILITY

SSR-Viewer 8.4 includes programmes to trigger self-maintenance routines for the radar hardware, increasing the life span of some of the critical components of the system.

GROUNDPROBE AMONG AUSTRALIA'S MOST INNOVATIVE COMPANIES

The Australian Financial Review's Most Innovative Company Awards, now in their fifth year, seek to celebrate Australian-based companies that strive to innovate. Organisations are judged on their ideas, how well an idea addresses the problem it's solving and the impact that the idea has made.

GroundProbe was awarded the 36th Most Innovative Company for 2016 from a shortlist of over 1000 entrants. According to the Australian Bureau of Statistics, there are 2,121,235 actively trading businesses in Australia.

GroundProbe CEO John Beevers says that GroundProbe's focus on innovation is not by accident but is a cornerstone of the business' strategy for success.

"Innovation doesn't happen by accident. We made a conscious decision to adopt it as a business strategy and invest in how we deliver it. Innovation is part of everyone's job at GroundProbe."

"Innovation is at the heart of our business," said Lachlan Campbell, GroundProbe's VP of Marketing and Technology.

"We use it to lead our industry and differentiate ourselves from our competition."

GroundProbe run a number of internal and external innovation programs designed to support development and growth within the business through customer and employee input. It's what helps GroundProbe to maintain its position as the market leader in slope stability radar monitoring technology.

"In the realm of product development, we engage our customers in our innovation process in several ways. We hold six-monthly product development forums and workshops to brainstorm improvements and to push the limits of our technology," said Mr Campbell.

The final list of the 50 Most Innovative Companies has been published in the Australian Financial Review, a country-wide publication that reaches 1.46 million readers.

GroundProbe®

MAKING MINING **SAFER**

FROM THE PRODUCTS WE DEVELOP, TO THE SLOPE MONITORING SOLUTIONS WE TAILOR, OUR VISION IS MAKING MINING SAFER

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