



# SABRE-SCAN™ Integration with Applanix OEM Boards Redefines Mobile Mapping

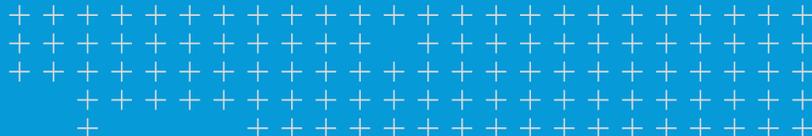


Precise positioning for mobile mapping and scanning on any vehicle type, in an easily transportable design

Using Applanix Direct Georeferencing OEM boards, SABRE ADVANCED 3D integrates precise positioning into the SABRE-SCAN™, a high-performance mobile mapping system with FARO® laser scanner and panoramic Ladybug®5 camera.

## Benefits

- ▶ Rapid deployment, survey at up to highway speeds
- ▶ Transportable for International Survey Ops on any vehicle
- ▶ Maps large areas safely
- ▶ High precision, accuracy



# overview

- ▶ Need for precise positioning technology in transportable, “multi-use” design
- ▶ Multifaceted integration: compatibility with FARO® Focus 3D Laser Scanner, Ladybug®5 camera for DG Imagery
- ▶ SABRE-SCAN™ to deliver quick installation, rapid mobilization, and fast dismantling process into two shipping cases
- ▶ Applanix GNSS-Inertial technology selected for accurate positioning
- ▶ Product required easy configuration to attach to most vehicles for survey use across land, sea, and air, internationally



Worldwide Deployment, FAST



## ABOUT SABRE ADVANCED 3D

SABRE ADVANCED 3D designs, develops and manufactures 3D remote sensing survey solutions for the geospatial industry. These solutions are designed to capture detailed 3D point clouds and HD camera imagery information for 3D visualization and mapping, allowing data extraction for “As-built” modelling.

SABRE strives to further the development of enhanced mapping solutions, and to streamline the 3D data capturing process, from acquisition to end-deliverable. A principal design feature of the SABRE-SCAN™ mobile mapping system is the compact build of the FARO® Focus laser scanner which

provides high-precision and high-definition 3D point clouds. It has a highly portable form factor for ease of use and deployment. For more product details and specifications, visit [www.sabresurvey.com](http://www.sabresurvey.com).

## NEED

SABRE ADVANCED 3D recognized the demand for a hybrid precise positioning technology in the mobile mapping and scanning market, and so set out to create the SABRE-SCAN™ hybrid system to offer flexibility – with detachable laser scanners for static scanning, and a compact modular design for ease of deployment, internationally.

To maximize utility and productivity, any such system



Side-by-side comparison of a camera image (left) and the mobile-mapped colored 3D point cloud image (right), both captured by the SABRE-SCAN™



requires easy configuration for use on moving vehicles (land, sea, and air), and must have a simple setup and dismantling process.

“Applanix is a core market leader. Their AP boards are the main sensors used with the [SABRE-SCAN™] system, [and they] always deliver the same thing: highly accurate, dependable, repeatable results.”

Pursuing this goal, SABRE designed the SABRE-SCAN™, a highly portable system that enables the FARO® Focus laser scanner to be utilized for mobile mapping large-scale survey operations, while supporting quick detachment of the laser scanners for conventional static spherical laser scans when mounted on a tripod. To enhance the collected survey data, users can also add a Ladybug®5 camera to simultaneously create georeferenced imagery.

## CHALLENGE

The challenge of building such a versatile and portable product was in its multifaceted nature: the new system would have to integrate with the FARO® Focus 3D for high resolution scanning, offer various grades of IMU data, work compatibly with the Ladybug®5 camera for imagery, and offer point cloud colourization. In order to expertly balance such a wide range of demands with high-level precision and lightweight design,



SABRE-SCAN™ main screen capture of Singapore street.

SABRE ADVANCED 3D turned to Applanix.

## SOLUTION

Developing the SABRE-SCAN™ system required working with an industry leader in positioning technology, and in customer support with respect to product integration, for a wholly **flexible** and tailored experience. First, Applanix' unique selection of highly-customizable OEM boards simplified the integration process, so that otherwise complex, fixed components could work together effectively in mapping. Even when factoring in the DG boards' diverse range of specification options, the hardware was still light-weight and compact enough to accommodate the SABRE-SCAN™'s fully portable design.

Also from a product standpoint, Applanix' many price point options provide customers the flexibility of a **scalable** implementation process, so that they can build their products



with future development or upgrades in mind. SABRE-SCAN™ chose the Trimble AP-20 board as the primary IMU sensor, with the option to use higher-grade sensors, if so required. Applanix also offers the POSPac MMS software, an intuitive software used to generate even more highly accurate post-processed data, which can be integrated at any time.

However, it was Applanix' **adaptable** approach which helped ease the integration and combined efforts of all such factors. Traditionally, the more complex an integration, the more in-depth product knowledge is required; Applanix' highly proficient team of experts were on hand to offer both creative and comprehensive solutions for every step of the production process.

When discussing Applanix' involvement with SABRE-SCAN™, 3D's Dynamic LiDAR solutions, SABRE's CEO Paul Edge touted the company's responsive nature as a key factor to the success of the integration into SABRE ADVANCED 3D's key product lines.

“Applanix has been very supportive: they're quick to respond to support our needs through the development process, are reactive to suggestions, and are always evolving their technology to become more compact, lightweight, and easy to use.” – Paul Edge, CEO of SABRE ADVANCED 3D

## DEPLOYMENT

Because of its adaptable nature, the SABRE-SCAN™ mobile mapping system has been deployed in multiple sectors, for an array of applications, including: transportation (road/highway mapping and autonomous vehicles), oil and gas, construction and civil engineering, urban planning, ports and harbours, public safety (law enforcement, security, civil and military defense), robotics, drones and remote sensing.

“Our team has been very happy with Applanix' support. The hardware, software and customer support are all excellent.”

### PAUL EDGE

CEO

SABRE ADVANCED 3D

## Highlights

- ▶ SABRE ADVANCED 3D Mapping Solutions for land, sea, and air
- ▶ Mobile Mapped 3D Point Cloud Colourization RGB rendering using captured panoramic camera imagery
- ▶ Large-scale survey efficiently and effectively using the SABRE-SCAN™ mobile mapping plug and play compatible with the full range of FARO® Focused laser scanners

# SABRE

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