

# Introducing: AES-25 for ag market

## *New technology gives accuracy to 2cm*

Topcon Precision Agriculture (TPA) has released a new electric steering product, the AES-25.

Rhett Schildroth, TPA engineering director, said, "The AES-25 is an accurate steering system that does not intrude into the operator's working area or alter the steering wheel position. There are no external components that could interfere with normal day-to-day operation within the cab."

The AES-25 is fully compatible with Topcon's new System 150 or the field-proven System 200 (X20 console). The patented new system provides "supreme performance and control previously thought possible only with hydraulic systems," Schildroth said. "The AES-25 is much more than assisted steering, it's an advanced solution for all platforms from basic steering to those striving for high-accuracy results."

Combined with System 150 or System 200 (X20), the AES-25 provides solutions from basic autonomous through real-time kinetic (RTK).

Schildroth said, "This allows the farmer to start with the accuracy needed for particular jobs, then step up to RTK with confidence they will achieve full 2cm accuracy. With Topcon's multiple satellite capabilities, inertial sensors, and full terrain compensation, the AES-25 offers unparalleled positioning and control."

System 200 (X20) features GPS+ capability, using signals from both GPS and GLONASS satellites. System 150 with G3 technology receives signals from all available satellites. More satellites means higher accuracy, maximum uptime, and 24/7 round-the-clock operation.

Schildroth said, "Not only does the AES-25 give precise steering control, but provides a viable alternative to hydraulic steering systems."

For the farmer who wants a simple console but precise steering performance, System 150 with the AES-25 provides row crop steering without hydraulics. With a quiet, high-torque motor, the AES-25 provides silent operation and reverse steering, an exclusive feature within electric steering systems."

The AES-25 provides:

- Quick, simple installation;
- Easy transfer from machine-to-machine; and
- Automated tuning.

For existing owners of X20 consoles with any GPS make or model, the AES-25 provides high accuracy auto guidance. Using the ProSteer ECU and cabin harness, an optional wheel angle sensor can be added for greater stability in challenging conditions (another Topcon exclusive). The entire system can be truly customized for any farm operation.

"Topcon continues to push the boundaries of technology, and is continuing to produce high-accuracy equipment to assist the bottom line for the farmer," said David Frick, TPA Australian national sales manager. "I can guarantee you we stand behind our products, which ultimately means we stand behind the farmer. This rugged product gives you options and accuracy, and that means value."



The AES-25 does not intrude into the operator's working area with external components that could interfere with normal day-to-day operation.



# Topcon's IP-S2: Combining GNSS positioning capabilities, inertial sensors

**T**opcon Positioning Systems (TPS) recently unveiled the IP-S2, a vehicle-mounted, mobile 3D precision mapping and survey system. The IP-S2 combines dual-frequency GNSS signal tracking and positioning and inertial measurement to integrate laser scanning and digital imaging.

Using 3D laser scanners, LIDAR, and/or cameras, the data collected is integrated, time-stamped and geo-referenced. The customer can then quickly and accurately combine LIDAR "point cloud" and digital imaging data to build 3D models of the areas driven.

Industry-leading sensor integration creates unlimited applications for the technology in GIS, construction, agriculture, mapping, and machine control -- all areas where Topcon has market leadership.

Ray O'Connor, TPS president and CEO, said, Topcon's Inertial Positioning System (IPS) "makes it possible to track motion through 3D space, creating an instant solution to myriad asset management and data collection applications."

With its high accuracy scanning and inertial measurement capabilities, its ability to support a variety of sensors and its 360-degree hemispherical digital video camera system, O'Connor said, "The IP-S2 can gather accurate measurement data in extremely difficult conditions, such as tunnels, under bridges, in heavily wooded areas or urban canyons."

"The applications for the IP-S2 are limitless," he said. "Whatever you can conceive of in the areas of asset management, data collection on precise location of virtually any subject, using digital photography capabilities, as well as laser scanning options, with its onboard tools the IP-S2 can do the job."

Collecting field data for GIS applications has always been a time-consuming task, usually taking several years to fully accomplish. As a result, many databases are incomplete, preventing managers from utilizing their full potential. Safety has also been an issue, requiring personnel to stand in highly traveled road corridors where most assets are located.

Eduardo Falcon, senior vice president and general manager of Topcon's Emerging Business Unit, said, "The IP-S2 revolutionizes the way in which GIS field data can be collected. One pass of an area at normal vehicular travel speeds provides a complete dataset of highly accurate position information and high resolution imagery."

The plug-and-play flexibility of the IP-S2 system allows for your choice of sensor combination to accurately collect just the information you need in a timely manner from the safety of your vehicle.



Web Browser Interface for IP-S2 Data Logging and Application Software

He added "Using new software tools, GIS operators can easily identify features, assign attributes, and then export them to geospatial applications. The reduction in cost and improvement in safety are exponential compared to traditional ground survey methods."

The IP-S2 standard system includes three high-resolution LiDAR scanners that cover the vehicle path at ground level and sweep the adjacent areas to a distance of 30 meters. The technology can provide location and geo-referencing with survey accuracy of visible utilities, traffic signals and roadways, modeling GIS maps, examining tunnels, taking inventory of and collecting 360-degree digital images (at a rate of 15 frames per second) to catalog surroundings in real time.

The IP-S2 software and hardware were designed and constructed in a modular format so that an array of present and future sensors can be easily integrated to the existing scanner



Integration of LIDAR point cloud data with digital imaging allows user to obtain coordinate measurement of objects and surfaces.

ports. The IP-S2 also works in coordination with an online data post-processing service to provide data sets with the highest possible accuracy. You obtain the information, you store the information safely and you can retrieve it effortlessly.

Falcon said the IP-S2 was designed "from the beginning with the goal to be easier to install, learn and use than any other existing mobile positioning solution."

There are more than 400 of the units currently in use worldwide.