

Smart Geometrics

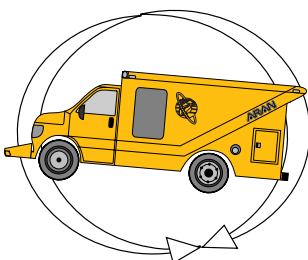
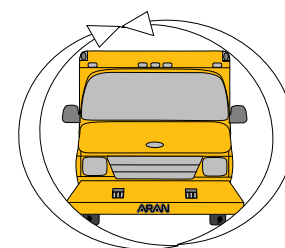
Accurate road geometry calculations

Smart Geometrics is a vehicle-mounted subsystem that utilizes a patented control algorithm and a combination of gyroscopes and software to measure the crossfall, transverse profile, vertical alignment (grade) and horizontal alignment (curve radius) of the roadway.

The Smart Geometrics subsystem is comprised of vertical gyroscopes measuring the roll, pitch and heading of the vehicle.

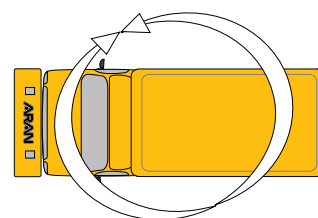
The outputs of these gyroscopes are fed into an on-board computer along with other ARAN® data to calculate information such as curve location, radius, grade location and percent grade required by highway departments and HPMS.

The roll data, when combined with Smart Rutbar data, provides detailed crossfall of the road on a lane by lane basis. Special software and the Auto Start feature produce multilane cross-sectional profiles. Mill/shim quantities can be calculated as well as water-ponding depth.



The pitch data is used to determine highway elevations and grade. Used in combination with bench marks or survey monument references, it provides vertical alignment (grade) details.

The heading gyro yields directional data describing horizontal alignment (curves) of the roadway. Curve entry and exit points are calculated from these data.



Features

- Roll data is integrated with Smart Rutbar data for precise cross fall measurement and transverse profiles of multi lane roads
- Vertical and horizontal geometrics collected at 4 meter intervals
- Self correcting for centripetal forces
- Provides the geometric data needed to determine safe passing zones, detailed transverse profile, ponding depth (hydroplaning potential), mill/shim quantities, grade and crossfall
- Moves at variable traffic speed
- Compatible with all ARAN systems such as Smart Rutbar, WiseCrax™ and Global Positioning System (GPS)
- Smart Geometrics combined with GIS and GPS provides automated mapping capability
- Supplements GPS by filling in the gaps when satellite lock is lost
- Satisfies FHWA requirements for curve classification