New solutions for your pavement assets

The (ARAN) LRMS is a network of tightly integrated subsystems that synchronously collect accurate and reliable data for roadway infrastructure management applications. The demand for accuracy, particularly in the area of rutting assessment means that LRMS collects up to 1280 points in defining rutting over 4 m width.

Pavement Condition and Road Asset Data

Automatic Road Analyser (ARAN) is one of the most advanced platforms available for collecting pavement condition and road asset data, providing you with a safe, accurate, reliable and cost effective understanding of the condition of your infrastructure. The system is a modular solution that can be reconfigured to meet the specific data collection needs of users. The ARAN system enables:

- Complete roadside inventories extracted from specially calibrated digital videolog images
- Inventories containing type, location, condition, measurements, unique identifiers, etc
- High accuracy condition rating from the TV quality video images

More information available at www.pavement.com.au
Digital Video

The ARAN is fitted with HDTV cameras which capture Right-of-Way and Pavement images allowing you to virtually view the road from the comfort and safety of our and your office.

The ARAN platform allows the correlation of video images with road condition data and geometry information to get the complete picture for efficient asset management and decision making. HDTV cameras are used because of the quality of the lenses and technical capability of the cameras to handle changes in white balance and brightness encountered during network surveys.

GPS

GPS is used to provide the location coordinates of roadway features and to create maps using CAD or a Geographic Information System (GIS). The ARAN® GPS is integrated with other subsystems so that if the receiver cannot lock onto enough satellites to determine its position or satellite lock is lost, the ARAN Distance Measuring Instrument (DMI) and the ARAN Inertial Reference System (SmartGeometrics or POS LV™) will fill in the gaps.

Laser Profilometry

**Rutting:** The laser rut measurement system (LRMS) is a vehicle mounted subsystem that uses dual scanning lasers to accurately measure transverse profiles up to 4m wide. The transverse profile is measured in order to calculate the depth of roadway rutting.

**Roughness:** The Laser SDP is a longitudinal profile measurement system that provides road profile data capture and real-time roughness index calculations using a combination of high-speed lasers and accelerometers, collected in each wheelpath and center of lane.

**Texture:** The Laser SDP samples at 12.5 mm intervals and measures bumps as short as 100 mm at variable speeds up to 100 km/h without loss of accuracy (Type 1 Profiler). 64 kHz lasers are used to define mean profile depth, which can in turn be used to determine the Estimated Texture Depth or Equivalent Sand Patch Texture Depth.

Road Geometry

The ARAN is equipped with Smart Geometrics, a vehicle-mounted subsystem that utilises 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.

Key Benefits

The ARAN is a high speed data collection system capable of collecting up to 15 data sets in a single pass.

- Complete roadside inventories extracted from specially calibrated digital videolog images
- Inventories containing type, location, condition, measurements, unique identifiers, etc
- High accuracy condition rating from the TV quality video images
- Data output can be formatted for subsequent import into a GIS or road asset management software environment

Characteristics

- High definition digital images
- Measure transverse profiles (rutting) up to 4 m wide
- Multiple data sets collected in a single pass
- High precision positioning system
- Curvature, gradient, crossfall and slope data
- Mapping: Road/Lane travelled path centreline - GIS
- Road profile data capture
- Texture data
- Data used by other Departments, e.g. Land and Enviro
- Map friendly outputs