The Hawkeye 1000 Series is a portable range of road survey equipment, designed to offer affordable solutions for profiling and video data.

HAWKEYE 1000 SERIES

The economic benefits of the 1000 Series and fit for purpose specifications make it an ideal solution for both video and road profiling applications. The system is stored in an easily accessible hardcase that sits in the back seat or back storage area of the vehicle.

Collecting accurate distance, time, and spatial information is assured in Hawkeye through the use of our innovative development, the Heartbeat. The Heartbeat module and support software accurately synchronises each sensor in the system, aligned against multiple inputs from a Distance Measurement Instrument (DMI), DGPS, and inertial systems. This allows for seamless upgrades of your equipment.

By combining multiple modules, the Hawkeye 1000 Series is capable of supporting up to a 3-laser profiler, two digital imaging cameras, Gipsi-Trac Geometry and GPS or DGPS.

PAVEMENT MANAGEMENT INTELLIGENCE

H1000 DIGITAL LASER PROFILER

The H1000 Digital Laser Profiler (DLP) measures longitudinal profile, roughness and macrotexture (MPD and SMTD). A World Bank Class 1 profiler, the H1000 DLP measures road profile using accelerometers and precision laser sensors, to compensate for vehicle body movement.

The Profiler is completely portable, utilising a detachable beam that comes complete with a tow-bar mounting kit, making it perfect for less frequent survey demands.

Applications

- Pavement condition assessment
- Accurate quality assessments
- Quality control and dilapidation surveys
- Contract validation

Features

- World Bank Class 1 profiler with a choice of one, two or three laser combinations to suit all budgets
- Simple turnkey operation
- Can be easily shipped for remote survey requirements and short-term vehicle installations
- Easily installed on a vehicle without special tools or technical personnel
- Lightweight aluminium beam with external weatherproof housing
- Data is linked to chainage and GPS coordinates
- Operational at highway speeds to reduce survey time and costs
- Results are independent of vehicle type

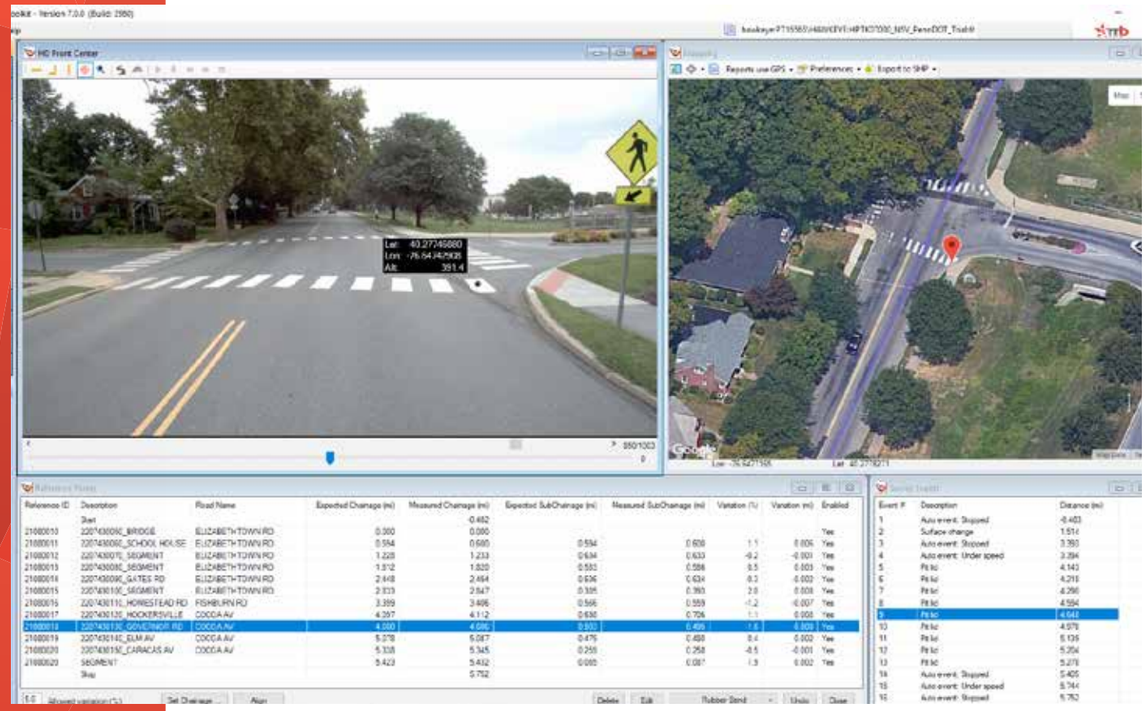
Outputs

- Longitudinal profile
- Roughness (IRI, NAASRA, Ride Number, HATI)
- Macrotexture (MPD and SMTD)
- Rut index
- GPS location
- Distance

Compliance with standards

- ASTM E950: Longitudinal profile
- AASHTO PP37: Pavement roughness
- ASTM E1845: Pavement macrotexture
- ISO 13473: Mean Profile Depth (MPD)

PAVEMENT MANAGEMENT INTELLIGENCE



H1000 DIGITAL IMAGING SYSTEM

The H1000 Digital Imaging System (DIS) is an imaging unit for visually capturing and locating roads and roadside features. The single, full high definition (HD), colour camera can be mounted on a windscreen or vehicle dashboard.

The DIS is completely portable, using a suction mounted camera and transportable carry case, allowing for the system to be easily transferred between vehicles. Motorised lenses enable the real-time adjustment of the iris for high quality images, with manual zoom and focus controls. If more than one camera is required, a custom roof rack is included to enable the mounting of the cameras onto the survey vehicle.

Applications

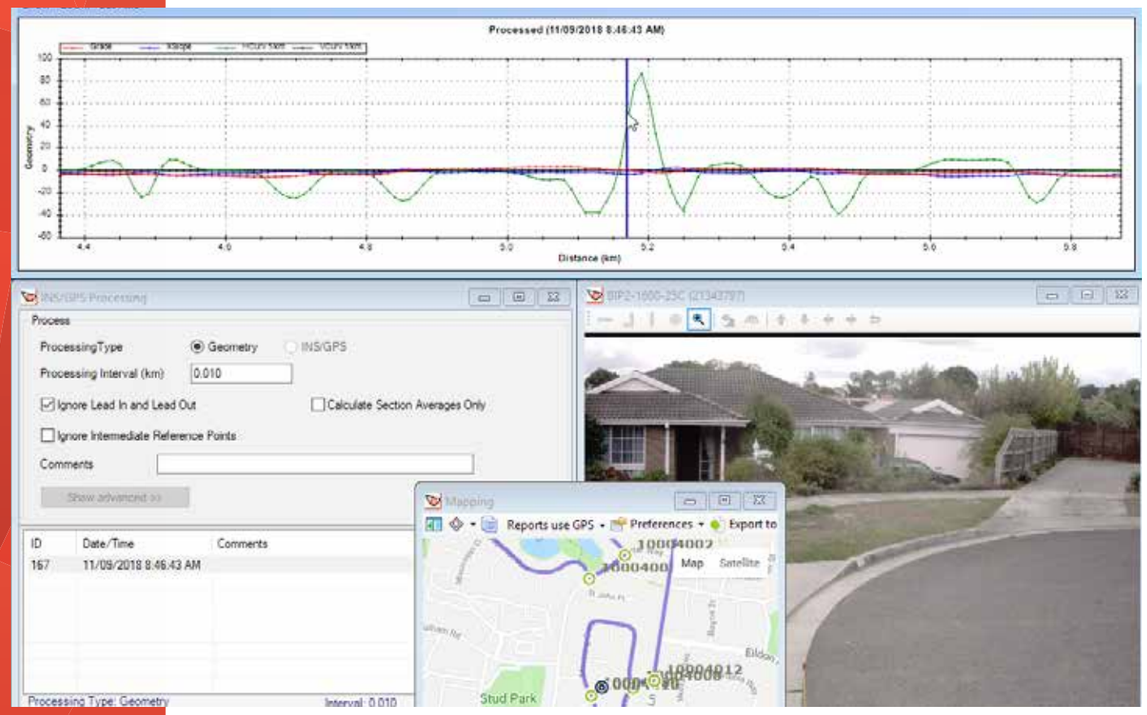
- Visual identification of roadside assets
- Right of way assessment
- Road safety assessment

Features

- Up to two HD cameras can be supported
- Simple turnkey operation
- Can be shipped for remote survey requirements and short-term vehicle installations
- Uses .AVI storage files
- Data is linked to chainage and GPS coordinates
- Operational at highways speeds to reduce survey time and costs
- Ideal for use on a variety of vehicles
- Georeferencing and measurement capabilities

Outputs

- Digital imagery
- GPS location
- Distance
- Shapefiles



H1000 GIPSI-TRAC GEOMETRY

The GIPSI-Trac 2 is the next generation GNSS + INS (Global Navigation Satellite Systems + Inertial Navigation System) geometry module, using dead-reckoning sensors and dual GNSS antennas.

This combined system provides a far greater update rate and supports more satellite systems than previous GNSS offerings, including SBAS and Omnistar. It boasts real-time fused GNSS/INS outputs in all survey conditions, including periods of GNSS outage.

The system records and combines inertial data from a 3-axis gyroscope, 3-axis accelerometer and a distance sensor with dual GNSS positional information. The built-in dead-reckoning allows for position data to be recorded when in tunnels, under bridges and locations with little or no GNSS coverage.

Applications

- Road geometry and measurement
- Mapping
- Conformance to pavement specifications

Features

- Uses an integrated GNSS receiver and dead-reckoning inertial sensors
- 200Hz fused data output
- Typical mapping accuracy of 1.2 m
- Exports to CSV and point or polyline shapefiles
- Operational at highway speeds to reduce survey time and costs
- Fully customisable GPS projection methods (Lat, Long, Easting, Northing and a range of datums)
- Supports Universal / Transverse Mercator,
- Operates in all locations:
  - Inside tunnels
  - Under bridges
  - highly vegetated or mountainous regions

Outputs

- Grade
- Cross-slope
- Horizontal and vertical curvature
- Inertially corrected GNSS position
- Distance

Features

- Windows graphical user interface for management of multiple computer systems
- Customisable screen layouts to suit individual operator requirements
- Multiple language support: English, Chinese, Spanish, Arabic and Russian
- Survey navigational tools such as compass, location reference points, maps and recording of events
- Computer generated speech for system warnings and other items requiring attention
- Supports a range of road reference formats

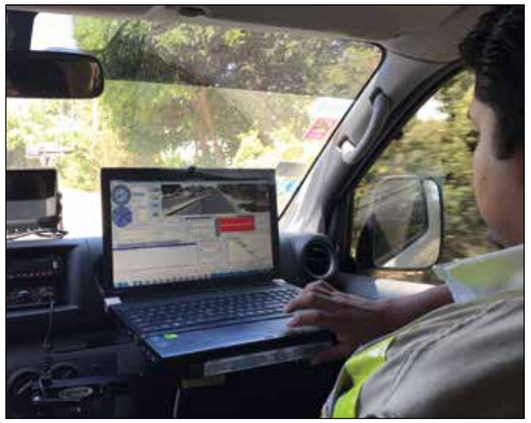
Capability

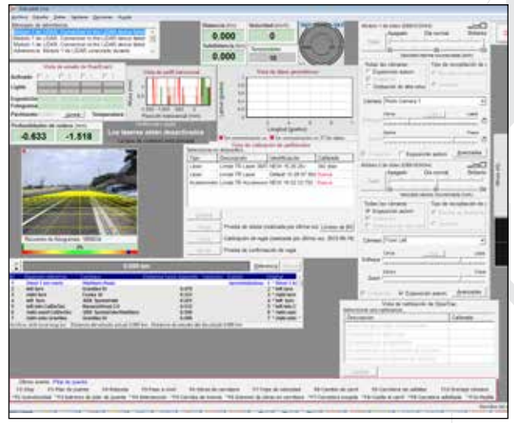
- Digital display of:
  - profilometry,
  - video imagery,
  - speed and distance
  - geometry
- Graphical display of:
  - GPS maps
  - road profile information
  - user defined survey notes tool

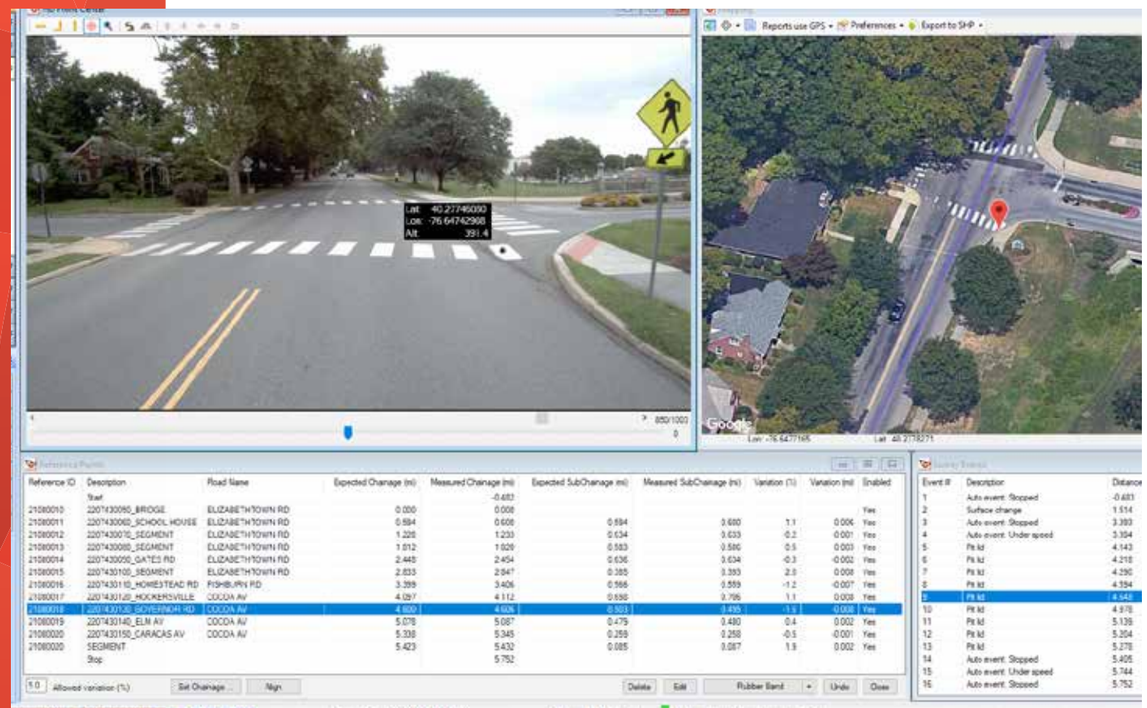
HAWKEYE ONLOOKER LIVE

Hawkeye Onlooker Live software is an interactive, real-time acquisition control interface that is capable of simultaneously controlling all inputs from any Hawkeye system, from a single software application.

The software runs on a dedicated computer in the vehicle or on a laptop-based system, with a fully customisable layout. The network control interface enables real-time result reporting and the capability to progressively add new Hawkeye modules, without the need for additional software.







HAWKEYE PROCESSING TOOLKIT

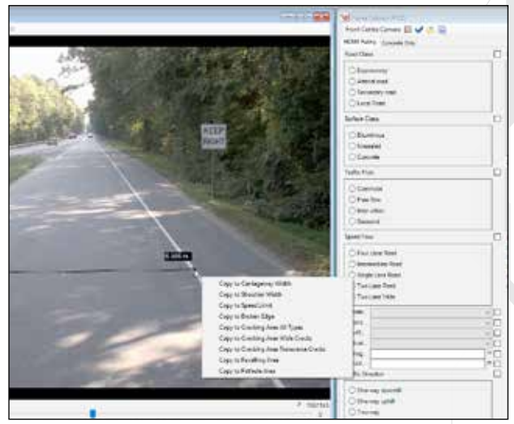
The easy-to-use interface of Hawkeye Processing Toolkit features an integrated image viewer and centralised database to review all collected survey parameters. The software can be used to review and rate individual video frames against chainage and GPS, save images to file and zoom-in to inspect areas of interest. Multiple images can be assessed simultaneously and the road can be ‘driven’ at a rate selected by the operator.

Features

- Extensive analysis and reporting capability
- Advanced mapping interface that supports Google background maps
- Centralised databases to allow multiple users to process and view the same survey data simultaneously
- Multiple language support: English, Chinese, Spanish, Arabic and Russian
- Metric and Imperial measurement systems supported
- Windows launching allowing for cross reference of data between applications
- Batch rubber banding and editable reference points
- Survey search filter
- Export to most PMS and GIS applications
- Batch processing and exporting
- Data export to CSV, PDF, MS Word, MS Excel, RTF, KML and SHP formats
- Windows (32 and 64 bit) compatible

Capability

- Calculation of:
  - International Roughness Index (IRI)
  - MPD and SMTD macrotexture
  - Rut index
  - Faulting
  - Longitudinal profile
  - Geometry
- Image area / length / height measurement
- Image stitching, zoom and resizing
- Asset location
- Profilometry analysis
- Graphical inertial / GPS mapping
- Shapefile imports
- User configurable rating forms
- Advanced HDM-4 exporting



Automated Road Rehabilitation Business Systems Pty. Ltd. Trading as ARRB Systems
25 Kingsley Close, Rowville VIC 3178 AUSTRALIA | info@arrbsystems.com | +613 8595 6000