

ROOM

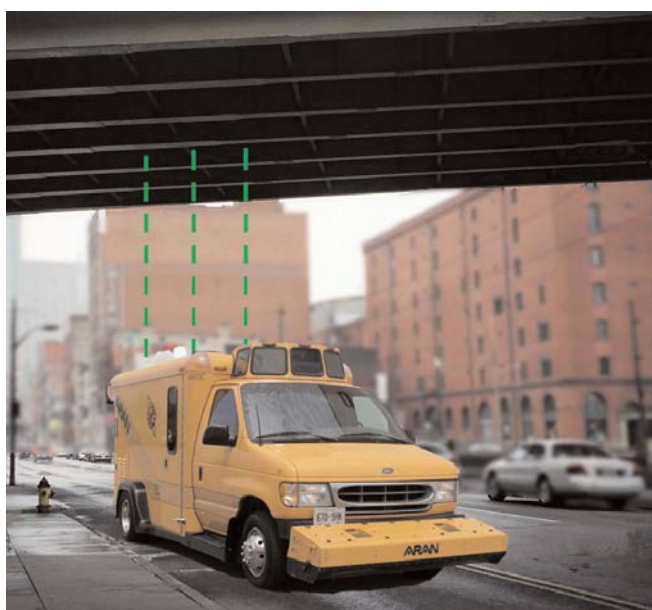
Roadware Overhead Obstruction Measurement

The ROOM system offers a safe and cost-effective method of collecting vertical height clearance measurements of overhead structures along a roadway.

ROOM operates from a vehicle while traveling at highway speeds. Upward projected laser sensors report the distance to overhead structures. The self-contained unit is mounted to the top of the collection vehicle to minimize interference of environmental activity as well as other data collection sensors and equipment. Safety of other vehicles and data collection personnel are not compromised and normal flow of traffic may continue uninterrupted while measurements are being collected. Additional safety requirements (such as lights for rear 'trailer type' models) are not required due to the unobtrusive mounting.

ROOM operates in conjunction with other ARAN subsystems to maximize the usefulness of the data. Subsystems such as distance measuring instrument (DMI) and GPS provide linear and georeferencing of vertical clearance measurement data, and digital right-of-way imaging provides a visual record of the overhead structures.

ROOM data can be displayed in VisiData software in graphical or tabular format, along with other ARAN data and right-of-way video images.



Features

- ***Accurate, repeatable results***
- ***Data collected at highway speeds***
- ***No physical extensions beyond vehicle length/width***
- ***Day or night operation***
- ***Compatible with all other ARAN subsystems***
- ***Create common output formats - viewable in existing graphing applications***
- ***Enable/Disable keystroke assignments on vehicle***

SYSTEM COMPONENTS

Sensor Bar

The Sensor Bar consists of three upward facing sensors attached to a rigid beam and protected with metal casings. The bar is mounted to the roof of the data collection vehicle and connected to onboard computers for real-time monitoring of data. All recorded measurements are stored for retrieval as needed.

System Control

Data collection of measurements is controlled by the Central Data Acquisition Controller (CDAC) from within the collection vehicle. The system may be operated continuously, or may be activated manually from within the vehicle for 'spot' measurements through user-assignable keystrokes.

ADDITIONAL SYSTEM INTEGRATION

The ROOM system measurements may be linked to data from other available ARAN subsystems.

Distance Measuring Instrument (optional)

The ARAN DMI is able to measure distances accurate to within +/- two-thousandth (0.002) mile per mile, (or +/- 0.2%) and displays the distance in miles/kilometers to three decimal places. The DMI is a non-contact optical encoder that divides each wheel revolution into 2,000 pulses. Using this methodology, distance measurement is not speed dependent so all linear measurements retain accuracy through the reality of fluctuating traffic conditions.

GPS (optional)

With the integration of on-board GPS collection, all measurements recorded are tagged with a GPS position. All available GPS systems offer real-time differential correction with an OmniSTAR™ satellite subscription. Various degrees of accuracy are available to meet requirements ranging from overall position indications of +/- 16.4 feet (5 meters) to +/- 1" (2.54 cm) RMS for mobile mapping applications. GPS position is recorded for the location that the measurement was taken (where clearance measurement applies) and calculated to provide the location of the structure measured.

Structure Image Capture (optional)

Digital imaging systems may be utilized to retain a visual record of all structures reported through ROOM. Up to six (6) perspective views may be configured onto a single vehicle, at various camera resolutions.



ACCURACIES

ROOM is designed to obtain under-clearance measurements of overhead structures. Structural members of some features (signs in particular) exhibit a cross sectional measurement as narrow as 3" (7.5 cm). ROOM will accurately capture and report all significant overhead clearance requirements:

Sample Rate:	714 Hz
Linear Sample Rate:	25mph (40 km/hr): 0.62" (1.57 cm)
	50mph (80 km/hr): 1.23" (3.12 cm)
	70mph (110 km/hr): 1.72" (4.37 cm)
Vertical Accuracy:	0.7" (1.8 cm) average (within range of system)
Range of System:	50' (15.24 m) from sensor surface

OUTPUT

Output of ROOM is a proprietary binary file. Post processing through provided software allows the creation of MS Access and SQL Server databases containing all of the clearance information for each structure as identified during collection. Structure information may include structure ID, county, structure type (underpass, overpass), clearance information, and other customizable fields. The output file can be edited using the applicable standard database interface and easily imported into existing applications.

SOFTWARE

Roadware's Data Importer software is provided with the ROOM system for easy translation of the binary output files.