

# GridSmart *Portable Traffic Data Collection System*

## Description

The GridSmart Portable Traffic Data Collection System is a turn-key, rapid deployment, self-contained system for capturing traffic data while leveraging the strengths of the GridSmart video vehicle detection platform. The system can provide data collection for an entire intersection or large highway area using a single ultra-wide-angle lens camera coupled with a ruggedized processor, creating a non-intrusive video tracking solution leveraging state-of-the-art developments in machine vision processing. GridSmart is designed using advanced omni-directional vehicle tracking algorithms along with three-dimensional vehicle modeling to provide accurate and reliable data collection including counts, length-based classification, average speed, turn movements, and more.



## Platform and Design

The GridSmart Portable Traffic Data Collection System is built on a portable, all-weather, self-contained, trailer platform for ease of use and rapid deployment. The GridSmart ultra-wide-angle lens camera is mounted on a three segment, telescoping, 32' or 40' mast with 360-degree lockable rotation, handheld mast controller with a 12' cable lead, and the GridSmart processing unit is housed in a sealed all-weather electronics enclosure. The entire system is powered from a battery bank of twelve (12) rugged AGM Gel batteries that receive a trickle charge from the four (4) 115 Watt, photovoltaic, solar panels for uninterrupted operation.

## Software Features

- « **Point and click zone drawing** for data collection
- « **Digital flattening of image** for user-friendly viewing of the native "fisheye" image
- « **Digital pan-tilt-zoom** for viewing of entire area and incident management
- « **Local or remote monitoring and management** to accommodate different environments and customer needs
- « **Occlusion management** provides improved tracking performance as objects that enter a zone are tracked "through" occlusions
- « **Omni-directional vehicle tracking** to allow for vehicles to be tracked throughout the data collection area for real turn movements
- « **Three-dimensional vehicle modeling** to allow for perspective to be applied within



## APPLICATIONS

- « Turn movement studies
- « Traffic counts
- « Saturation flow rate analysis
- « Volume-to-capacity analysis
- « Average speed and 85th percentile speed analysis
- « Length-based vehicle classification
- « Roundabout traffic data collection and turn movements
- « Remote surveillance
- « Situational awareness
- « Pedestrian studies
- « Remote surveillance
- « Parking occupancy studies



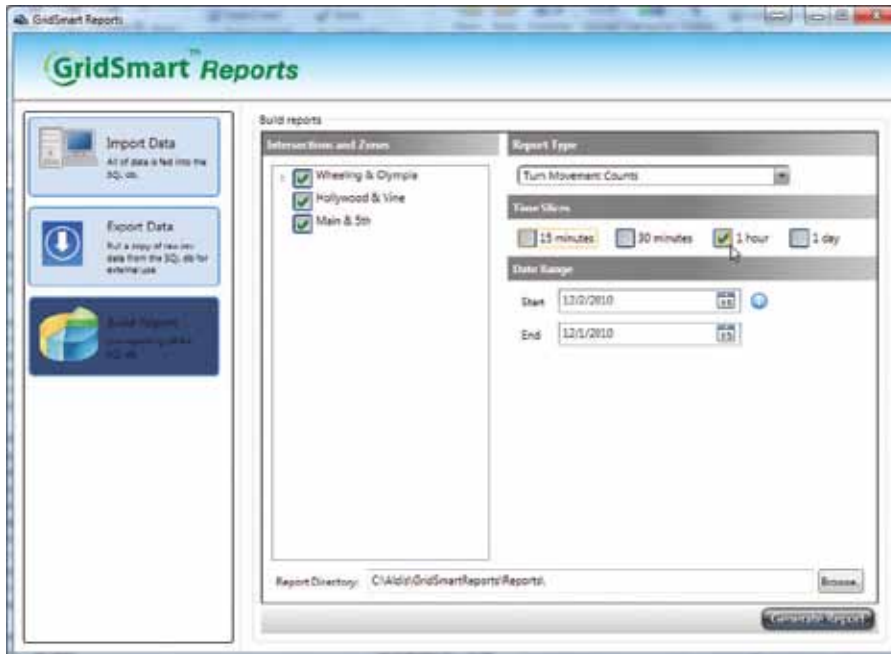
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## Software Features (cont'd)

the algorithms for improved performance

- « **Point-and-click reporting** for several standard reports such as Occupancy, Counts, Turning Movements, and more
- « **UTDF-compliant .csv raw data files** for ease of importing data into other modeling and simulation software



GridSmart Reports software interface

## Hardware Features

- « **No-aim, no-focus camera** for quick setup and deployment
- « **USB port** for local software updates and data collection
- « **IP addressable** for remote monitoring and management
- « **IP66-rated camera housing** for durability in adverse weather
- « **Heated camera and processor** for extreme environments
- « **Portable, all-weather, self-contained trailer** for universal application
- « **Power telescoping 30' or 40' mast** for ease of deployment and superior field of view for data collection
- « **All weather electronics enclosure** for reliable trouble-free operation in all environments
- « **AGM Gel batteries with solar trickle charge** for extended operations and virtually maintenance-free power management
- « **Integrated weather-proof keyboard/mouse/monitor** for completely self-contained and turn-key operation



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## BENEFITS

**Cost Effective** - Single sensor portable solution makes the GridSmart portable traffic data collection system a cost effective solution for advanced data collection projects, when compared to other comparable data collection technologies.

**Rapid Deployment** - The turnkey and fully self-contained design of the system allows it to be deployed and configured within a fraction of the time of other systems, reducing cost and minimizing any disruption to traffic flow.

**Full Field of View** - GridSmart monitors from horizon to horizon, providing more flexible and complete data collection capabilities, improved situational awareness, and enhanced incident management capabilities.

**Ease of Use** - The GridSmart user interface with adaptable, point-and-click, user-defined detection zones make system training and set-up fast and easy. GridSmart Reports and the UTDF-compliant raw data files provide for easy reporting and data integration.

**Low Maintenance** - With no moving parts, an IP66 sealed camera enclosure, downward facing lens, built-in-heating system, gel-type batteries, and weatherproof electronics enclosure, GridSmart is virtually maintenance free in all conditions.

**Proven Technology** - Fully tested in all climates and conditions.