

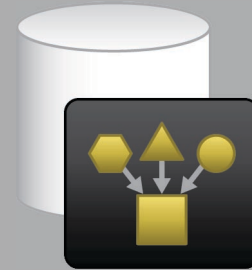


DataCollector & DataCollector Planning Edition

CMD DataCollector provides robust, customizable data collection from a variety of sensor technologies. This collection is scalable up to thousands of sensors and logging devices, providing an open interface, data queries and more than 90 days' worth of data.

Features

- Easily integrates the Wavetronix SmartSensor and other network-accessible devices into any new or existing ATMS environment
- Contains a broad library of drivers for some of the most commonly used traffic detectors, including these:
 - SmartSensor 105 and HD
 - Autoscope SoloPro/Terra cameras
 - 3M™ Canoga™ Microloops
 - EIS RTMS™
 - Diamond Traffic Counters
 - Mikros Data Loggers
- Gathers real-time data from traffic detection devices at intervals as frequent as 20 seconds
- Web interface lets users see the status of all sensors on a single page viewable on any networked PC
- Exports data as user-defined sets viewable as grid, graph, XML or text
- Capable of managing all 13 FHWA vehicle classes
- Also available in Planning Edition, which allows for more sensors



CMD DataCollector

Sensors Data System Help

Welcome administrator (Logout) 1/15/2009 10:40:09 AM



View Sensors and Data
DataCollector: Sensors

System Errors

5 Minutes: **0** Hour: **0**
24 Hours: **2**

Sensors Overview (Filtered)

Total: **132 (11)** Collecting: **11 (11)**
Failing: **5 (5)** Succeeding: **6 (6)**

[Add Sensors](#)
[Remove Sensors](#)
[View Errors](#)
[Config](#)
[Collection](#)
[Intervals](#)
[Commands](#)
[Networks](#)
[Data](#)
[Search](#)
[Help](#)

Display Settings Showing Sensors In Networks: **All** Of Type: **All** With status: **Collecting** By Data: **Any**

Select All	Status	Sensor	Network(s)	Location	Description	Custom	Intrvl	Fq	Errors	S	V	O
<input type="checkbox"/>	●	10.10.1.234:10001(0002)	LIVE-sensors	Go USC!	Test	105Multi	30	30	0%	64	60	11.0%
<input type="checkbox"/>	●	10.10.1.234:10001(0261)	LIVE-sensors	Gabe's Rack	Gabe's Pasadena	105Multi	30	30	0%	64	55	9.5%
<input type="checkbox"/>	●	10.10.1.235:10001(0284)	LIVE-sensors	Lindon Office	Gabes Dangler Sensor	105 Single	30	120	0%	63	50	6.5%
<input type="checkbox"/>	●	10.10.1.236:10001(0097)	LIVE-sensors	Workshop	SS125 ITS Radar	HD attached	20	120	15%	36	13	13.3%
<input type="checkbox"/>	■	10.10.1.237:10001(0097)	LIVE-sensors			HD Radio	30	240	100%	--	--	--
<input type="checkbox"/>	●	68.25.77.206:10001	LIVE-sensors			600	30	30	0%	--	--	--
<input type="checkbox"/>	■	3mloop:10001(344)	LIVE-sensors			3mloop	30	60	100%	--	--	--
<input type="checkbox"/>	■	Eis:10001(455)	LIVE-sensors	test	test	test	30	60	100%	--	--	--
<input type="checkbox"/>	●	isscope:10001(455)	LIVE-sensors			test empty isscope	30	60	0%	--	--	--
<input type="checkbox"/>	■	Smartsen125:10001(99)	LIVE-sensors			test	30	60	100%	--	--	--
<input type="checkbox"/>	■	xp:10001	LIVE-sensors			smartsens105testempty	30	30	100%	--	--	--



Technical Specifications

Traffic Data Collection

- Number of sensors that can be collected from:
 - DataCollector: 25, 50 or 100
 - DataCollector Planning Edition: 200, 350 or 500
- Collection frequency:
 - DataCollector: 20 seconds or greater
 - DataCollector Planning Edition: 1 hour or greater
- Retries in case of communication error: 5
- Gap-free data collection ensures that every available data entry is retrieved
- Displays communication history for each sensor

Sensor Management

- User can start and stop collection from individual sensors
- Maintains separate configurations settings for each individual sensor, including collection frequency and time zone
- Allows users to quickly run commands or change settings by performing batch jobs on selected sensors

Data Storage

- Storage: SQL database
- Storage length: minimum 8 days of sensor intervals (if less than 5 minutes); 90 days for 5-, 15- and 60-minute data
- Stored information:
 - Volume, occupancy, classification, speed, gap, headway, and 85th percentile speed of each lane for each interval
 - Flow direction for each lane
 - Speed bin data
 - Direction bin data
 - Sensor configuration history to retain data integrity even after lane or other configuration changes occur

Configuration Information

- Automated timer system automatically retrieves configuration information from each sensor at user-defined intervals
- Manual option lets user retrieve configuration information from each sensor or a group of sensors at any time
- Changes to sensor configuration saved in database automatically

Time Synchronization

- Automatically synchronizes time of each sensor to server time at user-defined intervals and as time discrepancies are detected
- Manual option lets user synchronize one or more sensors at any time
- Time system handles sensors in different time zones

Data Reports

- Graphs any data field for a sensor

Ordering Information

Part Number — **WX-CMD-DC25**

Server 25 sensor capacity

WX-CMD-DC50

Server 50 sensor capacity

WX-CMD-DC100

Server 100 sensor capacity

WX-CMD-DC-ENTP

Server large sensor network capacity

WX-CMD-SP50

50 sensor license pack plug In
(Real time)

WX-CMD-DCP200

Planning Edition 200 sensor capacity
(Non-real time collection)

WX-CMD-DCP350

Planning Edition 350 sensor capacity
(Non-real time collection)

WX-CMD-DCP500

Planning Edition 500 sensor capacity
(Non-real time collection)

WX-CMD-SP200

Planning Edition 200 sensor license pack
plug-in (non-real time)

Recommended Accessories

- DataMonitor Plug-in — WX-CMD-MP1
- DataCollector Reporting Pack — WX-CMD-RP1

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- Creates reports in XML, text, or SSM HD format
- Validation report provides quick verification that all data have been stored in the database.
- View data in table form that can be customized and then saved in Excel, XML, or text format.

Automated Data Exports

- Data exportation formats: TMDD, XML, tab-delimited text

- Data exportation intervals: 30 seconds or greater

Communication

- Supported communication:
 - Standard TCP/IP-based networks
 - Serial communication by communicating via a serial to TCP/IP converter
 - Communication over phone line via modem
- Collects data from multiple sensors on a single serial communication channel
- Addresses a sensor by either IP address or host name

Upgradeability

- Allows additional drivers to be added for sensor protocols other than the ones already installed
- Addition of new drivers doesn't require reinstallation or recompilation of software or reboot of computer

Web-based Interface

- Interface: Web-based and accessible to any user with Web browser and Internet connection
- Information listed in interface includes:
 - Sensors attached to DataCollector
 - Sensor status
 - Sensor configuration
 - Snapshot of recent data packets
- Other operations available through interface:
 - View data queries
 - Perform manual operations such as time synchronizations, configuration updates, or data collection
 - Set the timers for automated tasks
 - Add or remove new sensors to DataCollector
 - Add or remove users and change user privileges
 - Arrange sensors into groups, which can be assigned by user
- Interface accessed through user name and password. User logins can have different levels of permissions for different levels of access to functionality

Testing

- Burn-in testing for each unit
- Test period: not less than 1 week
- Testing format: unit is installed and connected to maximum number of sensors with all automated timers running
- Testing standard: unit is able to run consistently over the testing period, collecting data from each of the sensors attached to it at the specified data collection interval for each unit (20 seconds or greater).
- Testing documentation provided upon request, showing the results from the DataCollector over the testing period

Hardware Specifications

- Server: quad-core Xeon processor or equivalent

- Operating system: Windows 2003 Server or newer
- Memory: minimum 4 GB of SDRAM
- Hard drives:
 - Three or more
 - At least 72 GB each
 - RAID 5 fault tolerant
 - Hot-swappable
- Dual power supplies
- Networking: dual 1000 Mbps Ethernet network card or better
- Included software:
 - Firewall software for security
 - Remote management software for remote maintenance and upgrades
- CD-ROM drive: 24X or better
- Not included: monitor, keyboard or mouse

Support

- Delivered with 90 days of Gold Support as standard, effective after customer acceptance of the contracted system:
 - 30 hours prepaid phone technical support, same day guaranteed response
 - 2 days prepaid on-site technical support
 - Next business day on-site hardware service
 - Includes bug fixes, minor application updates, version updates, and software operation system updates
- Extended and/or upgraded support packages are available for purchase



DataCollector & DataCollector Planning Edition Bid Specification

1.0 General. This item shall govern the purchase and installation of a traffic data collection subsystem (TDCS), equivalent to the Wavetronix DataCollector™, that is used to collect data from a vehicle sensing device (VSD) equivalent to the Wavetronix SmartSensor™. It shall also govern the purchase of a traffic data collection subsystem specifically designed for planning, hereafter referred to as the planning edition (PE), equivalent to the Wavetronix DataCollector™ Planning Edition.

In this document, the planning edition shall be identical to the TDCS except where otherwise stated, namely in section 3.0.

Test results and other documentation demonstrating TDCS performance and capabilities shall be provided.

2.0 Product Description. The traffic data collection subsystem (TDCS) shall be a server-based data collection subsystem equivalent to the Wavetronix Data Center. The Data Center is an off-the-shelf ATMS subsystem appliance that streamlines the collection, management, and dissemination of traffic detector data. The TDCS collects real-time data from advanced traffic detectors and stores this data in a SQL database. Distribution of this data is achieved using standard open XML Center-to-Center data sharing messages and direct access to the database if necessary.

3.0 Traffic Data Collection. The TDCS shall collect data from 25, 50 or 100 VSDs (depending on license purchased) using a 20-second time interval or greater. The PE shall collect data from 200, 350 or 500 VSDs (depending on license purchased) using a 1-hour time interval or greater.

Robust collection ensures that all available data is retrieved. This is done by tracking all missing time intervals and retrieving those intervals once communication to a VSD is available. It will retry up to five times to get data from the VSD before reporting a communication error. The TDCS shall continue to attempt to collect from a VSD that has failed to communicate unless the collection process is manually turned off. The TDCS shall disconnect from the VSD after retrieving data from it.

The TDCS shall display a history of the 100 most recent communication attempts. This communication state of each VSD indicates one of the following: it is currently receiving data, there has been an error receiving data, or the VSD is not currently being collected from.

4.0 Sensor Management. The TDCS shall allow the user to stop and start data collection from any of the VSDs.

The TDCS shall maintain separate configurations settings for each individual VSD, including collection frequency and time zone.

The TDCS shall allow users to quickly run commands or change settings by performing batch jobs on selected sensors

5.0 Data Storage. The TDCS shall store all real-time traffic data in a SQL database for a minimum of eight days of sensor intervals (if less than five minutes); it shall store 90 days of sensor intervals for 5-, 15- and 60-minute data. The database shall contain the volume, occupancy, classification, speed, 85th percentile speed, gap, headway, speed bins, direction bins, and other common fields for each lane for each interval. The database shall contain flow direction information for each lane and collection frequency for each VSD. The data schema shall be open and available upon request.

6.0 Configuration Information. The TDCS shall provide an automated timer system that retrieves the configuration information from any and all VSD units assigned to the TDCS. The timer shall run the configuration retrieval process automatically every user-defined time period from 1 to 24 hours without requiring user input. All changes to the configuration shall be updated in the database automatically.

The TDCS shall also provide a method by which the user can at any time manually request an updated configuration from the VSD units regardless of the current time remaining on the automated timer.

7.0 Time Synchronization. The TDCS shall provide an automated timer system, which synchronizes the time of any and all VSD units assigned to the TDCS with the TDCS server time. The timer shall run the synchronization tasks automatically every user-defined time period from 1 to 24 hours without requiring user input. The time synchronization performed by the TDCS shall also take into account time zones, allowing it to handle VSD units that exist in two or more different time zones.

The system shall also include an option to detect incorrect times and automatically synchronize VSD clocks as needed.

The TDCS shall also provide a method by which the user can at any time run a time synchronization job with one or more VSD units manually regardless of the current time remaining on the automatic timer. The TDCS shall also provide a method to request and display the current time of any VSD unit allowing the user to view the time of any or all VSD units attached to the TDCS.

8.0 Data Reports. The TDCS shall graph any data field for a sensor and create reports in XML, text, or SSM HD format.

The TDCS shall have the capability to create validation reports, which provide quick verification that all data have been stored in the database.

The TDCS shall allow users to view data in table form that can be customized and then saved in Excel, XML, or text format.

9.0 Automated Data Exports. The TDCS shall export traffic data in intervals of 30 seconds or more in the following formats: tab-delimited text, XML and XML format in compliance with the TMDD Traffic Detector specification as described in "Volume II Companion Annexes – ASN.1 Message Representation & TMDD Data Dictionary."

10.0 Communication. The TDCS shall communicate over standard TCP/IP-based networks for the broadest amount of network compatibility.

The TDCS shall also support the following forms of communication:

- Serial communication by communicating via a serial to TCP/IP converter
- Addressing a VSD by either IP address or host name
- Communication over phone line via modem to VSD

The TDCS shall collect data from multiple VSDs that communicate on a single serial communication channel.

11.0 Upgradeability. The TDCS shall allow drivers to be added for other VSD protocols without having to reinstall or recompile the software elements of the TDCS.

The TDCS shall auto-detect the presence of new VSD drivers and make them available for use without rebooting the machine or interrupting current collection processes. Some VSD drivers may require user interface changes to allow user input of configuration information.

12.0 Web-based Interface. The TDCS shall provide a Web-based interface, accessible to any user with a Web browser and Internet connection, which will list the VSD units currently attached to the TDCS as well as their current status and configuration, and a snapshot of recent data packets.

The Web interface will also allow the user to view data queries, perform manual operations such as time synchronizations, configuration updates, or buffer clears, set the timers for automated tasks and add or subtract new VSD units to and from the TDCS.

The TDCS Web interface shall be accessed by a user name/password combination, allowing users with varying levels

of privileges to access some or all of the functionality of the TDCS. The Web interface will also allow users to be added or subtracted from the system, or modified to have different permissions.

The TDCS Web interface shall also allow VSD units to be arranged into groups, which can be assigned by user, allowing users to access only a subset of the total number of VSD units assigned to the TDCS.

13.0 Testing. Before shipping, each TDCS unit shall have a burn-in test period of not less than one week, where the TDCS unit has been installed and connected to the maximum number of VSD units allowed by the TDCS. Over the testing period, the TDCS shall be running with all automated timers set for data collection, time synchronization, and configuration updates.

The TDCS shall be able to run consistently over the testing period, collecting data from each of the VSD units attached to it at the specified data collection interval for each unit (not less than 20 seconds).

Testing documentation shall be provided showing the results from the TDCS over the testing period upon request.

14.0 Hardware Specifications. The TDCS hardware shall consist of a server with a quad-core Xeon processor (or equivalent), Windows 2003 Server operating system (or newer), a minimum of 4 GB of SDRAM memory, an array of three or more RAID 5 fault tolerant, hot-swappable, hard drives of no less than 72 GB each, dual power supplies and a dual 1000 Mbps Ethernet network card or better.

The TDCS shall also be provided with firewall software for security, and remote management software for remote maintenance and upgrades.

The TDCS hardware shall not include a monitor, keyboard, or mouse, but will include a 24X or better CD-ROM drive. The server will also include a minimum two-year, next business day on-site maintenance warranty.

15.0 Support. The TDCS shall be warranted with 90 days of support, defined as follows:

- 30 hours prepaid phone technical support, same day guaranteed response
- Two days prepaid on-site technical support
- Next business day on-site hardware service
- Included bug fixes, minor application updates, version updates, and software operation system updates

Extended and/or upgraded support packages shall be available for purchase.