

PUBLIC-INTEREST FINDING FOR PROPRIETARY-MATERIAL USE

ROUTE: VAR DES NO: VAR
PROJECT NO: VAR COUNTY: VAR
PROJECT DESCRIPTION: Programmatic approval.
FHWA OVERSIGHT: YES NO
PROPRIETARY MATERIAL:
Closed Circuit TV (CCTV) system, including:

1. High Speed Analog PTZ Dome ACUIXTM model: RVXHDXGNWACW-8.
2. Field Box Camera interface model: RVSFB120R.
3. Composite cable model: 13/C

Manufactured by TREEHAVEN technologies, Inc..

1. Description of Need:

The ITS Technology Deployment Division of the Indiana Department of Transportation is seeking approval to create a recurring special provision and ultimately incorporate into the Standard Specifications equipment essential to the providing Traffic Management Center (TMC) with real time visualized information from the roadways.

CCTV systems are designed to provide real time video stream from location, where system had been installed. They allow local and remote control of the Pan/Tilt/Zoom functions, which, in turn, allows operator to select the best view of the road, or incident.

Required functionalities include:

- Provide unique addressing in the network using internal protocol, compatible with existing INDOT Network.
- Provide 1 mile viewing area in any direction.
- Provide interface to existing INDOT Network.
- Provide capability of local and remote programming.
- Provide local and remote maintainability.

2. Product History: Over 200 of these systems are currently being used in Indiana. They demonstrate very high reliability and maintainability. Desired product is currently listed on INDOT Approved Materials List for Traffic Signal and ITS Control Equipment under ITS Networking Equipment. Testing was conducted according the ITM No. 951-10P and ITM No. 952-10P

3. Product Availability: Desired products, manufactured by TREEHAVEN Technology, inc., are only products on the market, meeting all requirements and compatible with existing system. Although there are High Speed PTZ Domes and field interfaces for them, none of such products

is capable of interfacing with existing network. There were no attempts by the manufacturers to present their products to be tested to ITM No. 951-10P and ITM No. 952-10P. Google search for High Speed Analog PTZ Dome returns multiple devices, meeting some of the requirements, but not all.

4. Product Cost: There is no equipment on the market to make cost comparison. The next closest product Samsung SCP-2370H is priced at \$1,738.80. However, this product will not interface with existing network.

5. Project Compatibility: Desired product is the only product on the market that is compatible with existing ITS hardware.

6. Maintenance: Desired equipment is designed such a way, that most of maintenance functions: monitoring, restoring functionality, programming/reprogramming – can be done remotely, which drives down maintenance cost. Training is available on line in Wiki Notes, accessible for tech personnel from any location in Indiana. Low failure rate (less than 3% including “acts of God”) and short order turnaround time results in the minimal storage requirement.

7. Engineering Analysis: This application is programmatic by nature and unique not to a specific ITS project, but to the ITS architecture that is already in place. CCTV systems are essential components that allow monitoring of the live traffic. The specifications are needed for synchronization with existing system and not unique to the specific project.

8. Expanded Economic Analysis: Due to the fact, that there is no equipment on the market to do comparison life cycle analysis, it may be stated that actual yearly maintenance cost is low. The average life cycle of the desired product is evaluated as 5 years. There are units currently in service installed in 2007. Annual replacement rate, including damage done by lightning, is negligible.

9. Contractual or Performance Implications: Use of desired items does not impose any restrictions on the use of other items on the contracts.

10. Attach Supplemental Documentation: Attached are:

- a) INDOT ITS Architecture;
- b) ITM # 951-10P High Speed Camera Dome with PTZ.
- c) ITM # 952-10P Camera Interface Rack Mounted.

11. Length of Time that Approval is Effective: 01/2012 until 01/2014

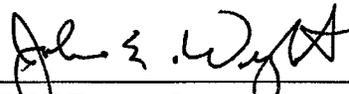
Prepared By: Konstantin Veygman

Field Engineer

INDOT-ITS Technology Deployment Division

Date:

Based upon the above finding, the use of the proprietary material listed is in the public interest and is hereby approved.

APPROVED:  Date: 1/23/12
~~INDOT Deputy Commissioner~~ Director
Engineering Services and Design Support

APPROVED:  Date: 1/26/12
Federal Highway Administration

INDOT has developed ITS infrastructure in urban areas statewide. It consists of vehicle detection, Closed Circuit TV cameras (CCTV), Highway Advisory Radio (HAR) sites, Dynamic (Variable) Message Signs (DMS), Travel Time Signs (TTS), and Virtual Weigh-in-motion (VWIM), Weigh-in-Motion (WIM), and Automatic Traffic Recorder (ATR) stations.

All data collected by the detectors and cameras is distributed to the Traffic Management Centers (TMCs). Information addressed to the driving public is sent from TMCs to the DMSs, HARs, and TTSs.

Communication to and from TMCs is provided via hybrid wireless/fiber optic means. The communication system is based on a "Back Bone", consisting of several nodes called Communication Data Processors (CDPs), connected with each other via redundant circuits (licensed wireless or fiber optic). The TMC is connected directly to the CDPs. Networking and communication equipment located at the TMC comprises the TMC Core Devices group. Field Core Devices installed at CDPs and major nodes include FCC Licensed and non-licensed wireless equipment, terminating and interfacing Fiber Optic equipment, and other networking equipment.

A typical INDOT ITS System consists of up to 3 distinguished groups of devices, described as follows.

1. Traffic Management Center (TMC) Core Devices. This group consists of major networking and communication equipment.
2. Field Core Devices. This group consists of FCC Licensed and non licensed wireless equipment, terminating and interfacing Fiber Optic equipment, and all networking equipment.
3. Field Devices. This group consists of:
 - a) Public information devices: DMS, TTS, HAR;
 - b) Detection devices: CCTV Cameras, non-invasive inductive detectors, microwave detectors;
 - c) Communication and networking devices: field processors, radios, fiber optic equipment, field switches.
 - d) Traffic Monitoring System devices: Virtual Weigh-in-motion (VWIM), Weigh-in-Motion (WIM), and Automatic Traffic Recorder (ATR): system controllers, roadway sensors, and communication and networking devices.

Existing ITS infrastructure is being expanded according with ITS Strategic Deployment Plan located at:

http://trafficwise.org/stratplan/TrafficManagementStrategicPlan_v2-4.pdf

Each ITS project involving Federal Funds adheres to the National ITS Architecture and the Systems Engineering Process as defined in 23 CFR 940. A Systems Engineering form is being completed and submitted to the FHWA for review and approval on each federally funded ITS project. Materials, used in such projects are in compliance with 23 CFR 635.411.

**INDIANA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS MANAGEMENT**

**PROCEDURE FOR BENCH TESTING, FIELD TESTING, AND APPROVAL LIST
REQUIREMENTS FOR HIGH SPEED CAMERA DOME WITH PAN-TILT-ZOOM
ITM No. 951-10P**

1.0 SCOPE.

- 1.1** This test procedure covers the methods that a High Speed Camera Dome with Pan-Tilt-Zoom is evaluated in the field, and is placed, maintained, or removed from an approval list.
- 1.2** The values stated in either English or acceptable SI metric units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, SI metric units are shown in parenthesis. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other, without combining values in any way.
- 1.3** This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 ITM Standards.

806 Approval List Requirements

2.2 NTCIP Standards.

1103 NTCIP Transportation Management Protocol (TMP)

9012 NTCIP Testing Guide for Users

3.0 TERMINOLOGY. Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101 and NEMA TS-2 Section 1.

4.0 SIGNIFICANCE AND USE. This ITM is used to evaluate, approve, maintain approval, and remove from the approval listing a High Speed Camera Dome with Pan-Tilt-Zoom which is placed on the Department's List of Approved Traffic Signal and ITS Control Equipment. Each model of the High Speed Camera Dome with Pan-Tilt-Zoom will be bench tested and field tested separately.

- 5.0 APPARATUS.** Complete ITS fully functional system
- 6.0 SAMPLING.** The manufacturer shall furnish, at no cost to the Department, one randomly selected production-run High Speed Camera Dome with Pan-Tilt-Zoom of each model for bench testing and field testing.
- 7.0 PROCEDURE.**
- 7.1** The manufacturer of the material shall submit the Preliminary Product Material Evaluation Form (Appendix A) for each model type of the High Speed Camera Dome with Pan-Tilt-Zoom which the manufacturer is requesting to be added to the listing.
- 7.2** The manufacturer of the material shall submit with the Evaluation Form the following:
- 7.2.1** An invoice showing an initial zero dollar amount (\$0.00) for the use of the evaluation sample material during the evaluation. The invoice shall also list the deferred cost of the material that the Department would pay if the material is purchased instead of returned upon the successful completion of the evaluation.
- 7.2.2** A certification of environmental testing shall be furnished with each major unit approval request indicating the unit has been tested and is in accordance with the environmental requirements from NTCIP. The certification shall specify the model and serial number of the High Speed Camera Dome with Pan-Tilt-Zoom tested. A complete log of each test shall be provided to the Department and will be maintained by the Department. The log shall indicate which, if any, component failed during the test, when the component failed, and the steps taken to repair the High Speed Camera Dome with Pan-Tilt-Zoom. The log shall include the date of testing, name and title of person conducting the tests, a record of conditions throughout the tests, and a temperature and humidity verses time chart. The maximum report interval of any chart shall be 24 h. The chart shall be from a recording machine used to monitor the status of the environmental chamber during testing.
- 7.2.3** Operation and Maintenance Manual(s), including theory of operation, schematics and components parts listing
- 7.2.4** One randomly selected production run High Speed Camera Dome with Pan-Tilt-Zoom for bench testing and field testing

- 7.2.5** List of required software and any additional items required to realize the full potential of the product.
- 8.0 SUBMITTAL REVIEW.** The documentation, including the environmental testing, will be reviewed for usability of the High Speed Camera Dome with Pan-Tilt-Zoom with Department approved NTCIP based ITS system in Indiana. The manufacturer's recommended schedule and extent of maintenance will be reviewed for acceptability.
- 9.0 BENCH TESTING.** The High Speed Camera Dome with Pan-Tilt-Zoom will be bench tested for compatibility with all ITS equipment assemblies used by the Department. The High Speed Camera Dome with Pan-Tilt-Zoom will be verified for full NTCIP functionality and full manufacturer's claimed optional functionality.
- 10.0 FIELD TESTING.** The field testing of the High Speed Camera Dome with Pan-Tilt-Zoom will consist of installing the High Speed Camera Dome with Pan-Tilt-Zoom in an ITS cabinet on the tower for a period of up to 12 months to monitor the following:
- 10.1** A log of any failures for the High Speed Camera Dome with Pan-Tilt-Zoom.
 - 10.2** The relative ease of use for the field personnel
 - 10.3** Overall build quality and expected lifecycle of the High Speed Camera Dome with Pan-Tilt-Zoom. The build quality and expected lifecycle shall be comparable with existing High Speed Camera Dome with Pan-Tilt-Zoom.
- 11.0 REPORT.** A final report will include the notations and findings from the electronic bench test and field testing results and documentation.
- 12.0 APPROVAL LIST.**
- 12.1 Approval of High Speed Camera Dome with Pan-Tilt-Zoom.** The High Speed Camera Dome with Pan-Tilt-Zoom model may be placed on the approval list when the following conditions are met:
 - 12.1.1** A potential net benefit to the Department is realized by inclusion of the item on the approved list.
 - 12.1.2** The unit passes the NTCIP environmental requirements.
 - 12.1.3** The required documentation is submitted.
 - 12.1.4** The bench and field testing are completed with satisfactory results.
 - 12.1.5** No excessive amount of routine or periodic maintenance is required.

12.1.6 There are no failures with any of the different types of ITS assemblies or individual components used by the Department.

12.1.7 All manuals, documents, and required software to realize the full potential of the Aries Field Processor are submitted

12.1.8 Only minimal maintenance operations were necessary during the field testing.

12.2 Maintaining Approval.

12.2.1 The ITS Technology Deployment Division of TMBU shall be notified each time any update or revision is made, and an explanation of the changes and benefits of the change shall be submitted. ITS Technology Deployment Division will determine if and to what extent a revision is to be placed into field operation and may fully re-evaluate the High Speed Camera Dome with Pan-Tilt-Zoom with the revision.

12.2.2 If the manufacturer makes any changes to an approved model to correct a non-NTCIP compliant or safety issue, the Department shall be notified immediately. The manufacturer shall correct all existing equipment purchased by the Department either directly, by contract, or through agreement prior to the change being incorporated at the manufacturer's production level.

12.2.3 A design change to an approved model shall require a submittal of the documented changes. At the discretion of the Department, resubmission of the model for testing and evaluation may be required. Permanent addition or removals of component parts or wires, printed circuit board modifications, or revisions to memory or processor software are examples of items that are considered to be design changes.

12.3 Removal from Approval List. High Speed Camera Dome with Pan-Tilt-Zoom will be removed from an approval list for, but not limited to, the following reasons:

12.3.1 Changes in the High Speed Camera Dome with Pan-Tilt-Zoom components or production process that fail testing and/or evaluation

12.3.2 If three consecutive years elapse without furnishing the High Speed Camera Dome with Pan-Tilt-Zoom

12.3.3 Performance of the High Speed Camera Dome with Pan-Tilt-Zoom no longer meets the intended purpose

12.3.4 Recurring similar product failures indicate a manufacturer's defect

**INDIANA DEPARTMENT OF TRANSPORTATION
DIVISION OF OPERATIONS SUPPORT
PRELIMINARY INFORMATION FOR PRODUCT MATERIAL EVALUATION**

Trade Name _____ Date _____

Manufacturer _____ Patented? Yes _____ No _____ Applied for _____

Address _____
Street No (P. O. Box) City State Zip Code

Representative _____ Phone No () _____

Address _____
Street No (P. O. Box) City State Zip Code

Product Information _____

Materials Composition _____

** Is this product considered HAZARDOUS MATERIAL when disposing of non-used or surplus materials? Yes _____ No _____

** What is the shelf life of this material? Years _____ Months _____ N/A _____

Recommended Use-Primary _____

Recommended Use-Alternate _____

Advantages and/or Benefits _____

** Materials specifications by manufacturer, installation/operation manual, maintenance manual, literature, test results, guarantee, hazardous material data sheets, plan, picture or sketch must be submitted with this form. In the case of electronic devices the schematic diagram, parts list, and parts layout diagram must be submitted for each printed circuit board within the device.

Meets following specifications:

AASHTO _____
ASTM _____
OTHER _____

Use by highway authorities or similar agencies in other states.

| Agency | Years Used | Remarks |
|--------|------------|---------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

** Has product ever been evaluated by and rejected for use by a governmental agency?

Yes _____ No _____ If yes, by what agency and for what reason?

Will demonstration be provided? Yes _____ No _____

Availability: Seasonal _____ Nonseasonal _____ Delivery at site _____

After receipt of order, are quantities limited? Yes _____ No _____

** Will FREE SAMPLES be furnished? Yes _____ No _____
If yes, Quantity Furnished _____

** If the sample is salvageable, do you desire to have it returned Yes _____ No _____

(Desired return of salvageable samples will be at the supplier's expense.)
(The manufacturer agrees upon the return of salvageable samples, such samples may be damaged or non-operable. Normal care will be taken that the samples, when returned, are in operable condition; INDOT, however, does not guarantee that the returned samples are operable.)

Will laboratory analysis be furnished? Yes _____ No _____

** Approximate cost _____ Royalty Cost _____

When was the product introduced to the market? _____

This product is an alternate for what product? _____

Will warranty be provided? Yes _____ No _____ If yes, for how long? _____

Background of company, including principal products _____

What offices of the Indiana Department of Transportation have been contacted?

Additional Information _____

(Attach additional sheets as necessary)

**INDIANA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS MANAGEMENT**

**PROCEDURE FOR BENCH TESTING, FIELD TESTING, AND APPROVAL LIST
REQUIREMENTS FOR CAMERA INTERFACE RACK MOUNT
ITM No. 952-10P**

1.0 SCOPE.

- 1.1** This test procedure covers the methods that a Camera Interface rack mount is evaluated in the field, and is placed, maintained, or removed from an approval list.
- 1.2** The values stated in either English or acceptable SI metric units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, SI metric units are shown in parenthesis. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other, without combining values in any way.
- 1.3** This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 ITM Standards.

806 Approval List Requirements

2.2 NTCIP Standards.

1103 NTCIP Transportation Management Protocol (TMP)
9012 NTCIP Testing Guide for Users

3.0 TERMINOLOGY. Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101 and NEMA TS-2 Section 1.

4.0 SIGNIFICANCE AND USE. This ITM is used to evaluate, approve, maintain approval, and remove from the approval listing a Camera Interface rack mount which is placed on the Department's List of Approved Traffic Signal and ITS Control Equipment. Each model of the Camera Interface rack mount will be bench tested and field tested separately.

- 5.0 APPARATUS.** Complete ITS fully functional system
- 6.0 SAMPLING.** The manufacturer shall furnish, at no cost to the Department, one randomly selected production-run Camera Interface rack mount of each model for bench testing and field testing.
- 7.0 PROCEDURE.**
- 7.1** The manufacturer of the material shall submit the Preliminary Product Material Evaluation Form (Appendix A) for each model type of the Camera Interface rack mount which the manufacturer is requesting to be added to the listing.
- 7.2** The manufacturer of the material shall submit with the Evaluation Form the following:
- 7.2.1** An invoice showing an initial zero dollar amount (\$0.00) for the use of the evaluation sample material during the evaluation. The invoice shall also list the deferred cost of the material that the Department would pay if the material is purchased instead of returned upon the successful completion of the evaluation.
- 7.2.2** A certification of environmental testing shall be furnished with each major unit approval request indicating the unit has been tested and is in accordance with the environmental requirements from NTCIP. The certification shall specify the model and serial number of the Camera Interface rack mount tested. A complete log of each test shall be provided to the Department and will be maintained by the Department. The log shall indicate which, if any, component failed during the test, when the component failed, and the steps taken to repair the Camera Interface rack mount. The log shall include the date of testing, name and title of person conducting the tests, a record of conditions throughout the tests, and a temperature and humidity verses time chart. The maximum report interval of any chart shall be 24 h. The chart shall be from a recording machine used to monitor the status of the environmental chamber during testing.
- 7.2.3** Operation and Maintenance Manual(s), including theory of operation, schematics and components parts listing
- 7.2.4** One randomly selected production run Camera Interface rack mount for bench testing and field testing

- 7.2.5** List of required software and any additional items required to realize the full potential of the product.
- 8.0 SUBMITTAL REVIEW.** The documentation, including the environmental testing, will be reviewed for usability of the Camera Interface rack mount with Department approved NTCIP based ITS system in Indiana. The manufacturer's recommended schedule and extent of maintenance will be reviewed for acceptability.
- 9.0 BENCH TESTING.** The Camera Interface rack mount will be bench tested for compatibility with all ITS equipment assemblies used by the Department. The Camera Interface rack mount will be verified for full NTCIP functionality and full manufacturer's claimed optional functionality.
- 10.0 FIELD TESTING.** The field testing of the Camera Interface rack mount will consist of installing the Camera Interface rack mount in an ITS cabinet on the tower for a period of up to 12 months to monitor the following:
- 10.1** A log of any failures for the Camera Interface rack mount
 - 10.2** The relative ease of use for the field personnel
 - 10.3** Overall build quality and expected lifecycle of the Camera Interface rack mount. The build quality and expected lifecycle shall be comparable with existing Camera Interface rack mount.
- 11.0 REPORT.** A final report will include the notations and findings from the electronic bench test and field testing results and documentation.
- 12.0 APPROVAL LIST.**
- 12.1 Approval of Camera Interface rack mount.** The Camera Interface rack mount model may be placed on the approval list when the following conditions are met:
 - 12.1.1** A potential net benefit to the Department is realized by inclusion of the item on the approved list.
 - 12.1.2** The unit passes the NTCIP environmental requirements.
 - 12.1.3** The required documentation is submitted.
 - 12.1.4** The bench and field testing are completed with satisfactory results.
 - 12.1.5** No excessive amount of routine or periodic maintenance is required.

12.1.6 There are no failures with any of the different types of ITS assemblies or individual components used by the Department.

12.1.7 All manuals, documents, and required software to realize the full potential of the Aries Field Processor are submitted

12.1.8 Only minimal maintenance operations were necessary during the field testing.

12.2 Maintaining Approval.

12.2.1 The ITS Technology Deployment Division of TMBU shall be notified each time any update or revision is made, and an explanation of the changes and benefits of the change shall be submitted. ITS Technology Deployment Division will determine if and to what extent a revision is to be placed into field operation and may fully re-evaluate the Camera Interface rack mount with the revision.

12.2.2 If the manufacturer makes any changes to an approved model to correct a non-NTCIP compliant or safety issue, the Department shall be notified immediately. The manufacturer shall correct all existing equipment purchased by the Department either directly, by contract, or through agreement prior to the change being incorporated at the manufacturer's production level.

12.2.3 A design change to an approved model shall require a submittal of the documented changes. At the discretion of the Department, resubmission of the model for testing and evaluation may be required. Permanent addition or removals of component parts or wires, printed circuit board modifications, or revisions to memory or processor software are examples of items that are considered to be design changes.

12.3 Removal from Approval List. Camera Interface rack mount will be removed from an approval list for, but not limited to, the following reasons:

12.3.1 Changes in the Camera Interface rack mount components or production process that fail testing and/or evaluation

12.3.2 If three consecutive years elapse without furnishing the Camera Interface rack mount .Performance of the Camera Interface rack mount no longer meets the intended purpose

12.3.3 Recurring similar product failures indicate a manufacturer's defect

**INDIANA DEPARTMENT OF TRANSPORTATION
DIVISION OF OPERATIONS SUPPORT
PRELIMINARY INFORMATION FOR PRODUCT MATERIAL EVALUATION**

Trade Name _____ Date _____

Manufacturer _____ Patented? Yes _____ No _____ Applied for _____

Address _____
Street No (P. O. Box) City State Zip Code

Representative _____ Phone No () _____

Address _____
Street No (P. O. Box) City State Zip Code

Product Information _____

Materials Composition _____

** Is this product considered HAZARDOUS MATERIAL when disposing of non-used or surplus materials? Yes _____ No _____

** What is the shelf life of this material? Years _____ Months _____ N/A _____

Recommended Use-Primary _____

Recommended Use-Alternate _____

Advantages and/or Benefits _____

**** Materials specifications by manufacturer, installation/operation manual, maintenance manual, literature, test results, guarantee, hazardous material data sheets, plan, picture or sketch must be submitted with this form. In the case of electronic devices the schematic diagram, parts list, and parts layout diagram must be submitted for each printed circuit board within the device.**

Meets following specifications:

AASHTO _____
ASTM _____
OTHER _____

Use by highway authorities or similar agencies in other states.

| Agency | Years Used | Remarks |
|--------|------------|---------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

**** Has product ever been evaluated by and rejected for use by a governmental agency?**

Yes _____ No _____ If yes, by what agency and for what reason?

Will demonstration be provided? Yes _____ No _____

Availability: Seasonal _____ Nonseasonal _____ Delivery at site _____

After receipt of order, are quantities limited? Yes _____ No _____

** Will FREE SAMPLES be furnished? Yes _____ No _____
If yes, Quantity Furnished _____

** If the sample is salvageable, do you desire to have it returned Yes _____ No _____

(Desired return of salvageable samples will be at the supplier's expense.)
(The manufacturer agrees upon the return of salvageable samples, such samples may be damaged or non-operable. Normal care will be taken that the samples, when returned, are in operable condition; INDOT, however, does not guarantee that the returned samples are operable.)

Will laboratory analysis be furnished? Yes _____ No _____

** Approximate cost _____ Royalty Cost _____

When was the product introduced to the market? _____

This product is an alternate for what product? _____

Will warranty be provided? Yes _____ No _____ If yes, for how long? _____

Background of company, including principal products _____

What offices of the Indiana Department of Transportation have been contacted?

Additional Information _____

(Attach additional sheets as necessary)

Person furnishing information _____
Name Title

Address _____
Street No (P. O. Box) City State Zip Code

Items marked ** MUST BE RESPONDED TO or further consideration may not be given for this product.

Please mail this form to: Manager, Office of Traffic Engineering
100 N. Senate Ave., Room N925
Indianapolis, IN 46204-2249

If INDOT elects to evaluate your product/material - traffic signal equipment will be shipped to:

Electronic Technician 1
Indiana Department of Transportation
7701 East Melton Road
Gary, IN 46403

While all other materials to be evaluated will be shipped to:

ITS Field Engineer
Indiana Department of Transportation
8620 East 21st Street
Indianapolis, IN 46219

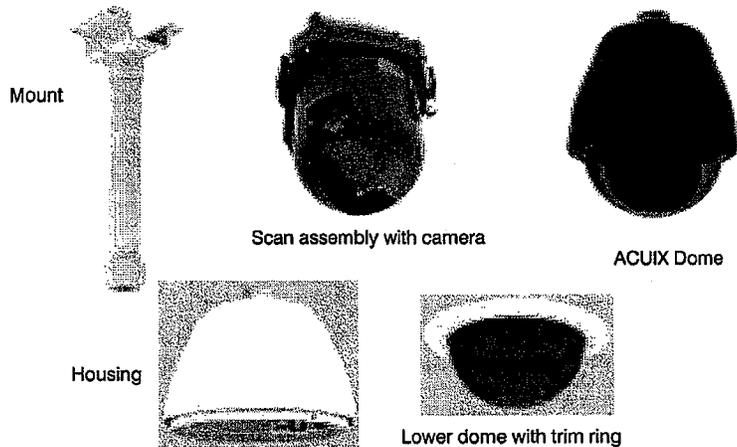
ACUIX™ PTZ High Speed Analog Dome Installation and Configuration Guide

The ACUIX analog PTZ dome features include:

- Housing options for both indoor and outdoor applications. Each housing contains an interface board that provides wiring for video on coax or unshielded twisted pair, and control data on shielded or unshielded twisted pair (RS485) or over coax.
- Camera options, including true-day night (TDN), wide dynamic range (WDR), and electronic image stabilization (EIS).
- A choice of lower dome colors (gold, clear, or smoke) and trim rings (white or black).
- Remote upload of firmware to all domes.
- Secure storage of all dome settings such as sector labels, presets, tours, and privacy zones.
- Dynamic privacy zones allow a user to mask up to 32 regions to ensure absolute privacy for sensitive areas.
- Password protection to prevent unauthorized users from changing the system settings.
- Other features include Flashback for quick review of two scenes and Still Shot™ to freeze a scene and save storage space during tours.
- Multi-language configuration menus in English, French, German, Dutch, Italian, Polish, Czech and Spanish.

ACUIX Hardware Terminology

Figure 1-1 Pendant Components



Person furnishing information _____

Name

Title

Address _____

Street No (P. O. Box)

City

State

Zip Code

Items marked ** MUST BE RESPONDED TO or further consideration may not be given for this product.

Please mail this form to:

Manager, Office of Traffic Engineering
100 N. Senate Ave., Room N925
Indianapolis, IN 46204-2249

If INDOT elects to evaluate your product/material - traffic signal equipment will be shipped to:

Electronic Technician 1
Indiana Department of Transportation
7701 East Melton Road
Gary, IN 46403

While all other materials to be evaluated will be shipped to:

ITS Field Engineer
Indiana Department of Transportation
8620 East 21st Street
Indianapolis, IN 46219

**Roadway Vision
Systems IP Field
Box Rack Mount
with Embedded
AXIS Server**

The Remote Vision System IP Field Box is an economical, robust CCTV field mounted accessory that provides an embedded AXIS server, an assortment of power, data, local camera setup and communications capability.

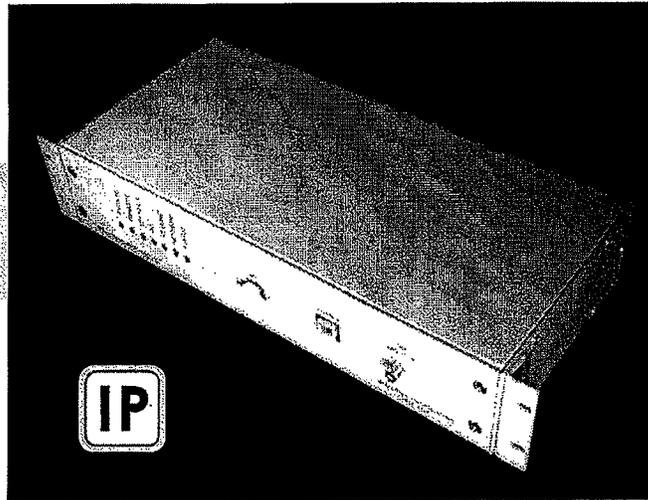
The embedded AXIS server eliminates the need for a separate stand-alone encoder.

24 Village Pointe Drive
Powell, OH 43065-7760
Phone: 614.791.8843
Fax: 614.789.0252
www.treehavenvision.com

Rev 0

**IP Field Box Rack Mount with
Embedded AXIS Server**

RVSFB120RA

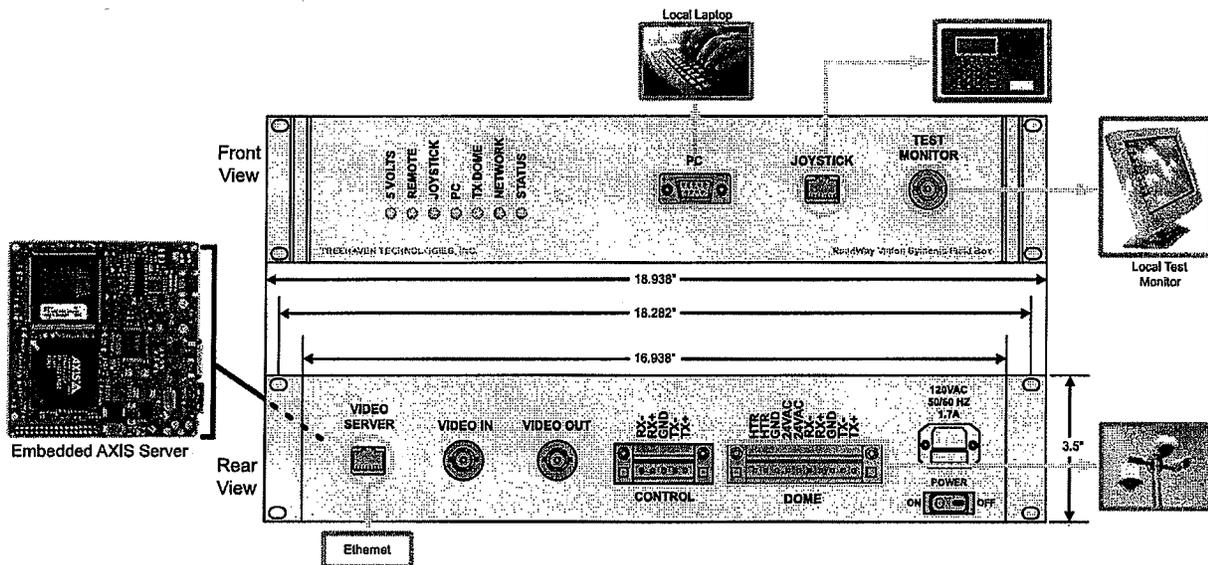


Features:

- Embedded AXIS server.
- Remote Diagnostics.
- Heater current detection. Reports the status of heater current and displays status on the video image.
- Text overlay to report system health status and other system parameters.
- Loss of video detection.
- Video sync generation with loss of video.
- Surge suppression on data, video and power lines.
- Video output for test monitor connection.
- Plug-in connection for joystick controllers.
- Plug-in serial connection for a laptop computer providing PTZ control and camera test and configuration. Includes laptop camera control software.
- Automatic detection of joystick, laptop or remote Operations Center PTZ control.



IP Field Box Rack Mount with Embedded AXIS Server RVSFB120RA



Technical Specifications

Front Panel Indicators:

5 VOLTS = Power Supply Status
 REMOTE = PTZ Data Activity on Remote Port
 JOYSTICK = PTZ Data Activity on Joystick Port
 PC = PTZ Data Activity on PC Port
 TX DOME = PTZ Data Activity to Camera
 NETWORK = AXIS Video Server Network Activity
 STATUS = AXIS Video Server Network Status

Electrical:

AC Input Voltage: 120VAC 50/60 Hz, 1.8A
 Dome Power Output: 24V, 50/60 Hz, 1.25 A
 Heater Power Output: 24V, 50/60 Hz, 5A

Mechanical:

Dimensions:
 19" W x 3.5" H x 12" D

Environmental:

Operating Temperature: -10 deg F (-23 deg C)
 to 140 deg F (60 deg C)
 Humidity: 5% to 95%, non-condensing

Data:

Joystick: RS-422, Rx+, Rx-, Tx+, Tx-
 Laptop: RS-232, Tx, Rx, Gnd
 Remote Control: RS-422, Rx+, Rx-, Tx+, Tx-

Video:

Camera Input: BNC, 75 Ohms
 Monitor Output: BNC, 75 Ohms

Video Server:

Video Compression: Motion JPEG
 MPEG-4 Part 2 (ISO/IEC 14496-2), Profiles: ASP and SP
 Resolutions: Resolutions 4CIF, 2CIFExp, 2CIF, CIF, QCIF
 max 704x480 (NTSC) 768x576 (PAL)
 min 160x120 (NTSC) 176x144 (PAL)
 Frame Rate: Motion JPEG: Up to 30/25 fps at 4CIF
 MPEG-4: Up to 30/25 fps at 2CIF
 Up to 20/17 fps at 4CIF
 Video Streaming: Simultaneous Motion JPEG and MPEG-4
 Controllable frame rate and bandwidth
 Constant and variable bit rate (MPEG-4)
 Pan/Tilt/Zoom: A wide range of analog PTZ dome cameras are
 supported, free drivers available at www.axis.com
 20 presets, Guard tour, PTZ control queue
 Image Settings: Compression levels: 11 (Motion JPEG) / 23 (MEG-4)
 Rotation: 90°, 180°, 270°
 Aspect ratio correction
 Color: color, black & white
 Overlay capabilities: time, date, text, image or
 privacy mask
 De-interlace filter

Treehaven Technologies, Inc

24 Village Pointe Drive
 Powell, OH 43065-8510

Phone: 614.791.8843
 FAX: 614.789.0252

www.treehavenvision.com

Note: The information contained in this document is subject to change without notice.

Rev 0