



STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
PROPRIETARY PRODUCT CERTIFICATION

630-020-07
PROGRAM MANAGEMENT
06/16

To: Mario Bizzio, P.E.
Design Engineer

Date: 6/19/2019

Financial Project ID: 441616-1-52-01 New Const. RRR

Federal Aid Number: D518-040-B

Project Name: ORANGE COUNTY ATM PHASE #4 - COUNTYWIDE ROADS

State Road Number: Varies Co. / Sec. / Sub.: Varies

Begin Project MP: Varies End Project MP: Varies

Full Federal Oversight: No Yes Note: If Yes, submit to FHWA Director.

A justification and all supporting documents must be attached to this document.
Mark the appropriate certification:

"I, Hazem El-Assar, Chief Engineer, of the Orange County Traffic Engineering
Print Name of Initiator Position Title Name of Agency

do hereby certify that in accordance with the requirements of 23 CFR 635.411(a)(2),
Mark appropriately (choose only one option):

- that this patented or proprietary item is essential for synchronization with existing highway facilities.
- that no equally suitable alternative exists for this patented or proprietary item."

[Signature] _____, 6/19/2019
Signature Date

For Department Use Only

"I, JAMES S. STROZ, JR., DIST. TRAFFIC OPS ENGINEER
Print Name Position Title

of the Florida Department of Transportation, do hereby approve this certification request made in accordance with the
requirements of 23 CFR 635.411(a)(2),
Mark appropriately (choose only one option):

- that this patented or proprietary item is essential for synchronization with existing highway facilities.
- that no equally suitable alternative exists for this patented or proprietary item."

Identify any conditions and limitations:

[Signature] _____, 6/20/19
Signature Date



PUBLIC WORKS DEPARTMENT ▪ TRAFFIC ENGINEERING DIVISION

CHRISTINE N. LOFYE, P.E., Manager

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June 19, 2019

Mr. Jim Stroz, P.E.
District 5 District Traffic Operations Engineer
Florida Department of Transportation
719 South Woodland Blvd
DeLand, FL. 32720-6800

Subject: Justification for Preferred Use of Proprietary Products for Traffic Signal and ITS Equipment by Orange County for Orange County ATMS Phase IV – FPN: 441616-1-52-01

Dear Mr. Stroz:

As a part of the above referenced project, we are requesting approval of the attached, signed and completed Proprietary Product Certification Form 630-020-07 for the following proprietary products for the Orange County Traffic Operations Division:

1. ITS Express, Layer 2 Managed Field Ethernet Switch model 3416 (fiber optic Ethernet switch)
2. Bosch Autodome VG5-ITS1080P-30X5 Camera with 24V power supply.
3. Ubiquiti Networks Rocket M900 MIMO AirMax Base station with a 900 Mhz Yagi Antenna
4. Juniper Layer 3 switch, Model EX4300 32F
5. Miovision Datalink Cell Modem

This equipment is being requested for installation at various locations throughout the County as part of the above referenced project. Approval of these proprietary products will allow consistency with existing equipment within the County providing synchronization and reducing cost by eliminating the need for additional training and inventory. Please find further justification for the use of these products on the following pages.

1. ITS Express, Managed Field Ethernet Switch model 3-416 (fiber optic Ethernet switch)
Evidence for Synchronization:
 - a. Function: The ITS Express Managed Field Ethernet Switch Model 3416 is consistent with the existing network deployment throughout Orange County's ATMS system and links traffic signal Ethernet devices. This switch is compatible with the TMC's central software and provides proprietary network monitoring protocols. The County has been using ITS Express Switches for the past 10 years with minimal issues.
 - b. Logistics: This ITS Express switch is compatible with the existing traffic signal network. County staff is experienced with ITS Express Switches. The County's Traffic Division maintenance staff is already trained and the use of a new family of switches would require significant training for operations and maintenance. A

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- new family of switches could also create integration and interoperability issues.
2. Bosch Autodome VG5-ITS1080P-30X5 Camera with 24V power supply Evidence for Synchronization:
 - a. Functionality: Bosch Autodome VG5-720 ITS Series Camera with 24V power supply is consistent with the CCTV deployment throughout Orange County. This camera is compatible with the TMC's central software and video wall as well as the previously mentioned products. The County has been using H.264 CCTV Cameras for several years with minimal issues.
 - b. Logistics: The Bosch Autodome VG5-720 ITS Series Camera with 24V power supply is compatible with the existing traffic CCTV system. County staff is experienced with Bosch CCTV Cameras. The Orange County Traffic Division maintenance staff is already trained, and the use of a new CCTV system would require significant training for operations and maintenance.
 3. Ubiquiti Networks Rocket M900 MIMO AirMax Base station with a 900 Mhz Yagi Antenna
 - a. Functionality: The Ubiquiti Networks Rocket M900 Base Station and 900 Mhz Antenna is consistent with the wireless units the County has been deploying for several years. They are functional with the County's existing networking equipment and have been proven to be reliable using a Time Division Multiple Access (TDMA) protocol which allows the subscriber and access points to communicate using pre-designated time slots to transfer the data packets. A Yagi antenna has been proven to be the most reliable type of antenna system as it is not susceptible to interference caused by trees and other foliage.
 - b. Logistics: Ubiquiti provides proprietary network management tools and a user interface design which the County maintenance staff is familiar with and adept in using.
 4. Juniper Layer 3 switch, Model EX4300 32F Evidence for Synchronization:
 - a. Functionality: The Juniper Layer 3 switches are deployed throughout Orange County and are the standard communications equipment for which the County has developed its ATMS communications scheme upon the communication protocols utilized by the Juniper switches. The switches offer a command-line interface (CLI) command shell that runs on top of a UNIX-like operating system shell. The command-line interface (CLI) shall be identical to that which is running on the existing Orange County Traffic Engineering layer-3 core network hardware. The switches will also provide Layer 2 & Layer 3 switching and routing operation with an operating system that separates a CLI modifiable candidate configuration from the current running configuration. Device shall offer the user the ability in the CLI to rollback a current running configuration to previous running configurations. The Juniper firmware shall also grant a user the ability in the CLI to commit a confirmed rollback on a countdown timer defaulting at 10 minutes. Device shall also offer the ability to create a rescue configuration.
 - b. Logistics: County staff is familiar with the software and programming the Juniper

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Layer 3 equipment allowing them to quickly identify, program and maintain the equipment reducing impacts to the network, and thus the traveling public. In addition, the County stocks and maintains spare Juniper Layer 3 routers and has support for their equipment through other contractual means and can quickly diagnose and repair or replace any failing or damaged controllers. The County has been utilizing Juniper equipment for several years and has in depth knowledge of the interfaces and firmware requiring no additional training. Using this switch provides the most efficient use of the County's limited staff and resources.

5. Miovision Datalink Cell Modem

- a. Functionality: The County has these units deployed at various locations throughout the County with no communication issues. These units do not require any additional licensing and provide connectivity for up to five devices, including an SDLC connection to the controller. Additionally, the County's ISS (Information Systems and Services) Department, for cybersecurity reasons, does not currently allow any other cell modem on the County's network other than the Miovision.
- b. Logistics: The Miovision units provide the County with a turn-key solution for communications that the County staff is familiar in using.

In conclusion, Orange County is requesting that the proprietary products listed in this document be furnished for this project. If you have any questions, please feel free to contact me at (407) 836-7866 or via email at Hazem.El-Assar@ocfl.net

Sincerely,

Hazem El-Assar

Hazem El-Assar, P.E.

Chief Engineer

