



Florida Department of Transportation

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GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JARED W. PERDUE, P.E.
SECRETARY

October 7, 2024

Cathy Kendall
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: 684
Proposed Specification: **6840200 Network Devices**

Dear Ms. Kendall:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Ronald Meyer to remove obsolete content and reflect currently used devices and technologies.

Please review and transmit your comments, if any, within two weeks (10 business days). Comments should be sent via email daniel.strickland@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at (850) 414-4130.

Sincerely,

Signature on File

Daniel Strickland, P.E.
State Specifications Engineer

DS/jb

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

NETWORK DEVICES
(REV 6-30-24)

SUBARTICLE 684-2.1 is deleted and the following substituted:

684-2.1 General: Meet the following requirements:

Managed Field Ethernet Switch*	Section 996
Managed Hub Ethernet Switch	Section 996
Device Server*	Section 996
Digital Video Encoder*	Section 996
Digital Video Decoder*	Section 996
Wireless Communication System*	Section 996
Media Converter*	Section 996
Cellular Modem*	Section 996

*Use products listed on the Department's APL.

SUBARTICLE 684-2.5 is deleted and the following substituted:

~~**684-2.5 Digital Video Encoder and Decoder:** Ensure that the complete video and data transmission system, defined as the combination of digital video encoder (DVE) and digital video decoder (DVD) hardware together with the existing or planned network infrastructure, simultaneously transports video and data from multiple remote field locations to multiple monitoring locations for roadway surveillance and traffic management.~~

~~Provide a software decoding and control package that allows the viewing of any video source connected to the network through a DVE, and which allows the pan tilt zoom (PTZ) control of any PTZ camera on the network, the discovery of DVE and DVD devices on the network, and the control and adjustment of programmable parameters in the DVE and DVD equipment, including the network addresses of these devices, at no additional cost.~~

~~**684-2.5.1 Digital Video Decoder:** Provide a DVD that is either a hardware-based network device or a software application that resides on a workstation PC. Ensure that the software application provides PC desktop display of IP network video streams.~~

~~Provide all setup, control programs, and diagnostic software related to the DVE or DVD.~~

~~Provide all equipment licenses, where required for any software or hardware in the system.~~

~~Ensure that any software-based decoder applications do not interfere with SunGuide® software operating when installed and used together on a shared hardware platform. Ensure that the software-based decoder offers an open Application Programming Interface (API) and software development kit available to the Department at no cost for integration with third party software and systems.~~

~~**684-2.5.2 Interoperability:** Provide DVE and DVD devices and software that are interoperable and interchangeable with DVE and DVD devices and software from other manufacturers.~~

~~**684-2.5.3 Network Interface:** Ensure that fiber ports are single mode with a minimum link budget of 30 dB or the type and power detailed in the Contract Documents.~~

684-2.5 Wireless Communication System: The wireless communication system (WCS) must provide connectivity between devices, systems, and locations as required by the Contract Documents. Ensure that the WCS is fully compatible and interoperable with connected Ethernet devices and the traffic control system network.

SUBARTICLE 684-2 is expanded by the following:

684-2.7 Cellular Modem: The cellular modem must provide connectivity between devices, systems, and locations as required by the Contract Documents. Ensure that the cellular modem is fully compatible and interoperable with connected Ethernet devices and the traffic control system network. Coordinate cellular services, network configuration, and settings for cellular modems with the Department a minimum of thirty (30) days prior to scheduled installation.

SUBARTICLE 684-4.5 is deleted and the following substituted:

684-4.5 ~~DVE and DVD~~ Wireless Communication System Field Acceptance Testing: Conduct inspection and testing at the installed equipment location according to the approved test plan. Perform the following:

1. Verify that physical construction has been completed as detailed in the Plans.
2. Inspect the quality and tightness of ground and surge protector connections.
3. Verify proper voltages for all power supplies and related power circuits.
4. Connect devices to the power sources.
5. Verify all connections, including correct installation of communication and power cables.
6. Verify ~~video image is present and free from oversaturation and any other image defect in both color and monochrome mode~~ all device settings comply with the network configurations and settings provided by the Department using a laptop PC.
7. Verify ~~network connection to the DVE and DVD through ping and telnet session from a remote PC.~~ connectivity and data exchange between the WCS, connected devices, and the traffic control network.
- ~~8. Verify serial data transmission through the DVE and DVD serial ports.~~
- ~~9. Verify support of unicast, multicast, and SAP.~~

684-4 is expanded by the following:

684-4.6 Cellular Modem Field Acceptance Testing: Conduct inspection and testing at the installed equipment location according to the approved test plan. Perform the following:

1. Verify that physical construction has been completed as detailed in the Plans.
2. Inspect the quality and tightness of ground and surge protector connections.
3. Verify proper voltages for all power supplies and related power circuits.
4. Connect devices to the power sources.
5. Verify all connections, including correct installation of communication and power cables.

6. Verify all device settings comply with the network configurations and settings provided by the Department using a laptop PC.

7. Verify connectivity and data exchange between the cellular modem, connected devices, and the traffic control network.

ARTICLE 684-6 is deleted and the following substituted:

684-6 Method of Measurement.

The Contract unit price for each network device, furnished and installed, will include furnishing, placement, and testing of all equipment and materials, and for all tools, labor, hardware, operational software packages and firmware, supplies, support, personnel training, shop drawings, documentation, and incidentals necessary to complete the work.

~~Provide software based decoders at no additional cost when furnished in conjunction with DVEs.~~

~~A software based DVD provided individually must be paid under the pay item below.~~

ARTICLE 684-7 is deleted and the following substituted:

684-7 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section.

Payment will be made under:

Item No. 684- 1- Managed Field Ethernet Switch-each.

Item No. 684- 2- Device Server-each.

~~Item No. 684- 3- Digital Video Encoder with Software Decoder each.~~

~~Item No. 684- 4- Digital Video Decoder each.~~

Item No. 684- 5- Media Converter-each.

Item No. 684- 6- Wireless Communication System Device-each.

Item No. 684- 7- Managed Hub Ethernet Switch-each

Item No. 684- 8- Cellular Modem-each

NETWORK DEVICES

(REV 6-30-24)

SUBARTICLE 684-2.1 is deleted and the following substituted:

684-2.1 General: Meet the following requirements:

Managed Field Ethernet Switch*Section 996

Managed Hub Ethernet SwitchSection 996

Device Server*Section 996

Wireless Communication System*Section 996

Media Converter*Section 996

Cellular Modem*Section 996

*Use products listed on the Department's APL.

SUBARTICLE 684-2.5 is deleted and the following substituted:

684-2.5 Wireless Communication System: The wireless communication system (WCS) must provide connectivity between devices, systems, and locations as required by the Contract Documents. Ensure that the WCS is fully compatible and interoperable with connected Ethernet devices and the traffic control system network.

SUBARTICLE 684-2 is expanded by the following:

684-2.7 Cellular Modem: The cellular modem must provide connectivity between devices, systems, and locations as required by the Contract Documents. Ensure that the cellular modem is fully compatible and interoperable with connected Ethernet devices and the traffic control system network. Coordinate cellular services, network configuration, and settings for cellular modems with the Department a minimum of thirty (30) days prior to scheduled installation.

SUBARTICLE 684-4.5 is deleted and the following substituted:

684-4.5 Wireless Communication System Field Acceptance Testing: Conduct inspection and testing at the installed equipment location according to the approved test plan. Perform the following:

1. Verify that physical construction has been completed as detailed in the Plans.
2. Inspect the quality and tightness of ground and surge protector connections.
3. Verify proper voltages for all power supplies and related power circuits.
4. Connect devices to the power sources.
5. Verify all connections, including correct installation of communication and power cables.
6. Verify all device settings comply with the network configurations and settings provided by the Department using a laptop PC.

7. Verify connectivity and data exchange between the WCS, connected devices, and the traffic control network.

684-4 is expanded by the following:

684-4.6 Cellular Modem Field Acceptance Testing: Conduct inspection and testing at the installed equipment location according to the approved test plan. Perform the following:

1. Verify that physical construction has been completed as detailed in the Plans.
2. Inspect the quality and tightness of ground and surge protector connections.
3. Verify proper voltages for all power supplies and related power circuits.
4. Connect devices to the power sources.
5. Verify all connections, including correct installation of communication and power cables.
6. Verify all device settings comply with the network configurations and settings provided by the Department using a laptop PC.
7. Verify connectivity and data exchange between the cellular modem, connected devices, and the traffic control network.

ARTICLE 684-6 is deleted and the following substituted:

684-6 Method of Measurement.

The Contract unit price for each network device, furnished and installed, will include furnishing, placement, and testing of all equipment and materials, and for all tools, labor, hardware, operational software packages and firmware, supplies, support, personnel training, shop drawings, documentation, and incidentals necessary to complete the work.

ARTICLE 684-7 is deleted and the following substituted:

684-7 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section.

Payment will be made under:

- | | | |
|---------------|----|--|
| Item No. 684- | 1- | Managed Field Ethernet Switch-each. |
| Item No. 684- | 2- | Device Server-each. |
| Item No. 684- | 5- | Media Converter-each. |
| Item No. 684- | 6- | Wireless Communication System Device-each. |
| Item No. 684- | 7- | Managed Hub Ethernet Switch-each |
| Item No. 684- | 8- | Cellular Modem-each |