



MEMORANDUM

Missouri Department of Transportation

St. Louis District

TO: Eric Schroeter
State Design Engineer

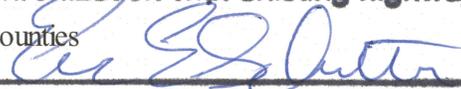
CC: Jim Smith - de
Jon Nelson - tr
Jerica Holtsclaw - de

FROM: Shirley Norris, P.E.
Project Manager, Jefferson/Franklin Counties

DATE: December 3, 2014

SUBJECT: Proprietary Item Certification Request
Cisco Network Equipment

I do hereby certify that in accordance with the requirements of 23 CFR 635.411(a)(2), this patented or proprietary item is essential for synchronization with existing highway facilities.



State Design Engineer

We request approval of a proprietary item certification to use Cisco network equipment on the following project:

J6P2348 – Route 47, Franklin County

This project includes bridge replacement and pavement work which will temporarily interrupt the existing intelligent transportation system (ITS) equipment including the communication systems. The project will also include the replacement of network equipment including network Layer 2 switches used to facilitate ITS device communications to the Gateway Guide system.

CISCO NETWORK EQUIPMENT

Based on the evaluation of the current system and Cisco network equipment in place within the MoDOT central office and St. Louis District, and a consideration of the integration risks associated with using other non-Cisco products, the St. Louis District of the MoDOT respectfully requests to use the following Cisco network equipment for this project:

Cisco IE 3000 Switch

Existing Cisco Deployment

Currently, the above referenced Cisco equipment is being utilized across the St. Louis District's ITS network to facilitate device and backhaul communications in to the Gateway Guide ITS system. On past projects, the MoDOT have provided the Cisco network equipment as part of the Commission furnished items on each contract. Throughout the system, Cisco Layer 2 switching equipment (Cisco IE 3000) is used to transport device communications to Node locations strategically located throughout the region. These Node locations use Cisco Layer 3 switch equipment (Cisco 3750), as well as SONET multiplexing equipment (Cisco ONS-15454) to backhaul device communications to the Transportation management Center (TMC) located in Chesterfield, MO. This project will be the second for the St. Louis District to have the Contractor furnish all network equipment.

Integration with Current System

To ensure continuity of the MoDOT's communication network, it is requested that Cisco network equipment be used to extend the network along MO 364. This project will include integration of the new equipment at proposed locations shown on the plans. In addition, integration with existing backhaul equipment at adjacent Node locations may be required to enable redundant communications per the MoDOT's network policy. The work for this project includes the following tasks:

- Configuring Layer 2 devices at each field cabinet.
- Configuring Layer 3 devices at existing node cabinets for backhaul of communications.
- Configuring SONET multiplexing equipment for backhaul between existing node cabinets.
- Field testing equipment post installation.
- Training staff and maintenance contractor on the use and maintenance of equipment.
- Maintaining spare parts inventory.

Discussion of Alternatives

Research of potential alternatives indicates that other than Cisco equipment, there is not a singular system that reasonably meets the current needs and requirements of the MoDOT's backhaul communications network. There is industry standard switching equipment that would meet specifications, but would require substantial integration with existing Cisco equipment found elsewhere in the network. This would require additional resources of staff and budget to complete this deployment and integration within a reasonable amount of time. It would also require an increase in staff training for deployment of a new vendor's product and on-going maintenance. Other vendor's products may have interoperability issues when administering protocol that may be proprietary to Cisco found elsewhere on the MoDOT's ITS network. Reconfiguring the current system to allow for a 3rd party vendor protocol to be interoperable would require a significant undertaking and is not recommended.

In conclusion, if another vendor's product is deployed on this corridor, the cost to procure, integrate, and maintain the communication equipment is expected to be significantly more than the Cisco products proposed above. Additionally, the system deployment for this project represents a small system expansion in comparison to the overall St. Louis metro area deployment.

Therefore, it is recommended that Cisco equipment be used for the expansion of the ITS system. Approval of this request at your earliest convenience would be appreciated. The project is currently underway.

Approved by:

Eric Schroeter, State Design Engineer

Date