

**COLORADO DEPARTMENT OF TRANSPORTATION
 PROPRIETARY ITEM – CERTIFICATIONS OR FINDING IN THE PUBLIC
 INTEREST (FIPI)**

INSTRUCTIONS;

A specific patented or proprietary material, specification, or process shall not be required on a contract except as permitted in Section 2.24 of the Project Development Manual (PDM). Use this form to obtain approval of the use of a proprietary feature on a project or group of projects.

PROPRIETARY ITEM OR PROCESS:

<p>Name of proprietary item or process:</p> <p>All Network Gear from Ciena</p>	<p>Manufacturer name, address & phone No.:</p> <p>Ciena Corporation Corporate Headquarters 7035 Ridge Road Hanover, Maryland 21076 United States Tel: 410-694-5700</p>
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NEED FOR PROPRIETARY ITEM:

Check only one	LOCATION
<input type="checkbox"/> Project Specific (if FHWA has no interest then RE approval otherwise requires FHWA approval) – FIPI or (Stds & Specs Engr approves) - Certification	Provide Project No., Project Code, and Location:
<input type="checkbox"/> Corridor Specific (if FHWA has no interest then RE approval otherwise requires FHWA approval) – FIPI or (Stds & Specs Engr approves) - Certification	Provide Corridor Description
<input type="checkbox"/> Region-wide(Progrm Engr approval and requires FHWA approval) – FIPI or (Stds & Specs Engr approves) - Certification	Identify CDOT Region:
<input checked="" type="checkbox"/> Statewide(Branch Mgr approval and requires FHWA approval) – FIPI or (Stds & Specs Engr approves) - Certification	
For a corridor, region-wide, or statewide request, a Certification or FIPI will have a term of: (Check only one)	
<input checked="" type="checkbox"/> 3 Years (maximum allowable)	Specify dates of term: Jan 2019 to Jan 2021
<input type="checkbox"/> Other (specify term)	Specify dates of term:

JUSTIFICATION

I hereby certify that it is in the public interest to specify the above named proprietary item or process for the following reasons: (Check all that apply)

- It is essential for synchronization.(Certification only)
- No equally suitable alternative exists.(Certification only)
- It will be used for research or experimental purposes on short sections of road. (Such use must be processed through the Research Branch of DTD. Attach documentation from DTD.) (FIPI only)
- It is in the public interest not to allow any other products even though other equally acceptable materials or products are available. (FIPI only)

JUSTIFICATION (required). Justification consists of information that documents the reasons marked above for use of the proprietary item or process. For research or experimentation include a work plan that describes how the research or experimental feature will be used and evaluated. Attach additional pages and documentation as necessary.

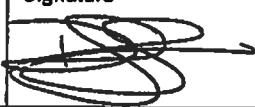
Ciena carrier Ethernet networking equipment will be used to transport data to and from roadside ITS devices and communication node locations on the CDOT Statewide fiber optic network. Ciena supports Q8032 and all open Standards

The field networking equipment is environmentally hardened for the extreme weather conditions throughout Colorado maintaining a robust internal structure for data transport which will benefit the public in less downtime, resulting in fewer dollars spent on deployment, troubleshooting and maintenance along with consistent information for the motoring public.



With the use of a single manufacturer a benefit will also be found in warehouse and replacement costs.

CDOT has deployed Ciena equipment on projects statewide over the past two years and currently has experience in the reliability and maintenance ability of the equipment to provide high quality data transport.

APPLICANT SIGNATURE

Name Bob Fifer	Title (CDOT Resident Engineer, Program Engineer, or Branch Manager, as appropriate, see flowchart in section 2.24 of the PDM): ITS Branch Manager	Signature 	Date 1/17/19
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APPROVAL SIGNATURES:

Signature 	CDOT Resident Engineer (Required on project specific or corridor FIPIs)	Date 1-17-19
Signature	CDOT Research Engineer (Required for research and experimentation FIPIs)	Date
Signature	FHWA Operations Engineer (Required for all region-wide and statewide FIPIs and FHWA oversight project level FIPIs)	Date
Signature 	CDOT Stds.&Specs. Engr. (Required for all proj specific, corridor, region-wide & statewide Certifications)	Date 1-18-19

COPIES OF APPROVED FORM TO (as appropriate):

CDOT Project Engineer Jill Scott / John Williams	CDOT Resident Engineer: Jill Scott
CDOT Program Engineer: Bob Fifer	CDOT Research Engineer:
CDOT Standards and Specifications Engineer (all, FIPI with draft of any required specification change):	CDOT Branch Manager
FHWA Operations Engineer:	

COLORADO DEPARTMENT OF TRANSPORTATION

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<input checked="" type="checkbox"/> Statewide(Branch Mgr approval and requires FHWA approval) – FIPI or (Stds & Specs Engr approves) - Certification	
For a corridor, region-wide, or statewide request, a Certification or FIPI will have a term of: (Check only one)	
<input checked="" type="checkbox"/> 3 Years (maximum allowable)	Specify dates of term: Jan 2016 to Jan 2019
<input type="checkbox"/> Other (specify term)	Specify dates of term:

JUSTIFICATION

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CDOT has deployed Ciena equipment on projects statewide over the past two years and currently has experience in the reliability and maintenance ability of the equipment to provide high quality data transport. *(Continued on attachment)*

APPLICANT SIGNATURE

Name	Title (CDOT Resident Engineer, Program Engineer, or Branch Manager, as appropriate; see flowchart in section 2.24 of the PDM):	Signature	Date
Saeed Sobhi	ITS Branch Manager		2/10/16

APPROVAL SIGNATURES:

Signature	CDOT Resident Engineer (Required on project specific or corridor FIPIs)	Date 1-4-16
Signature	CDOT Research Engineer (Required for research and experimentation FIPIs)	Date
Signature	FHWA Operations Engineer (Required for all region-wide and statewide FIPIs and FHWA oversight project level FIPIs)	Date
Signature	CDOT Stds. & Specs. Engr. (Required for all proj. specific, corridor, region-wide & statewide Certifications)	Date 2-11-16

COPIES OF APPROVED FORM TO (as appropriate):

CDOT Project Engineer Jill Scott / John Williams		CDOT Resident Engineer: Jill Scott
CDOT Program Engineer: Saeed Sobhi		CDOT Research Engineer:
CDOT Standards and Specifications Engineer (all, FIPI with draft of any required specification change):		CDOT Branch Manager
FHWA Operations Engineer:		

Four years ago CDOT ITS embarked on evaluating Carrier Class Network equipment that addressed both Dense Wave Division Multiplexing (DWDM) and carrier grade Ethernet technologies (CWDM) to provide robust network solution that was able to scale bandwidth quickly and seamlessly. CDOT ITS used due diligence of all the top carrier class network manufactures products and technologies to finalize and solidify its future technical direction.

After numerous meetings, product evaluation and overall technical vision, Ciena was selected as the CDOT ITS network solution. Ciena has met every ITS requirement from hardened field switches and node building aggregation to the carrier class fiber backbone switches (DWDM) including its Network Management System (NMS) that provides ITS staff a software solution to centrally manage all of the Ciena technologies.

The field networking equipment is environmentally hardened that is ideally suited for Colorado's extreme weather conditions statewide, while maintaining a robust internal structure for data transport. This solution benefits the public with a more reliable ITS network creating a more consistent and reliable data transport to support internal ITS applications and the external information to the travelling public.

CDOT has deployed Ciena equipment on projects statewide over the past three years that has resulted in network solution that have integrated seamlessly with field devices (cameras and VMS) and other roadside sensors while providing a high quality data transport system. Standardizing on single vendor solution has also simplified the cost of replacement and warehouse inventory while reducing overall maintenance and support. Ciena also uses open network protocols and standards which eliminates typical network issues surrounding proprietary network protocols.

