Washington State Department of Transportation

Memorandum

DATE: June 29, 2016

TO: Jeff Carpenter
State Design Engineer
MS-47330

FROM: Ted Bailey
Traffic Operations Business Manager
(360)705-7286
MS-47344

SUBJECT: **WSDOT Certification – Equipment and Associated Software for Traffic Control, Monitoring, and Information Systems, and Intelligent Transportation Systems**

- **Extent of Certification:** Statewide
- **Approval Period:** July 1, 2016 – June 30, 2019

CERTIFICATION STATEMENT: ***"I Jeff Carpenter, State Design Engineer, of the Washington State Department of Transportation, do hereby certify that in accordance with the requirements of 23 CFR 635.411(a)(2), that the patented or proprietary items listed in Appendices A, B & C are either essential for synchronization with existing highway facilities based on product function and logistics or no equally suitable alternative exists."***

Signature _____ Date 6-29-2016

SUPPORTING DOCUMENTATION:

The purpose of this certification is to continue a process that was established in February of 2008 when WSDOT and FHWA jointly approved a statewide pre-approved list of proprietary equipment and associated software for traffic control, monitoring, and information systems, and other intelligent transportation system (ITS) components. Consistent with the previous approvals, this list of items is primarily comprised of specialized electrical and electronic equipment or structural components that are an integral part of this equipment. If, during the approval period, the need to revise or append the list outlined in the attached appendices becomes apparent, a new certification shall be processed.

This Statewide Blanket Proprietary Approval grants each Region approval for one (1) manufacturer for each category of equipment. Appendix A contains a complete list of all categories of equipment with a list of manufacturers that produce equipment for each category and the Region(s) in which they are approved for use. If the Region has an "X" associated with a specific manufacturer, then approval is granted to specify any product from that specific manufacturer for the given category of equipment.

Appendix B contains a reference list of all manufacturers listed in Appendix A and the categories for which they are approved. Appendix C contains a reference list of all categories listed in Appendix A. Appendices B and C are provided for convenience and are superseded by Appendix A in the event of a conflict.

Designers are required to place project specific justification in the Design Documentation Package indicating the need to use the selected proprietary item(s). The project file justification will require the specific manufacturer(s), model number(s) if available, and timely justifications that are most relevant at the time the proprietary item is selected during the design process. A brief statement describing the thought process leading up to the selection of the proprietary material shall be provided to document the decision making process. A copy of this justification shall be sent to Ted Bailey, Traffic Operations Division, 310 Maple Park Avenue SE, PO Box 47344, Olympia, WA 98501 (MS#47344), baileyte@wsdot.wa.gov, (360)705-7286.

The long range vision of this Statewide Blanket Approval is that all included equipment and software be evaluated to determine if a comparable and acceptable alternative can be successfully procured through performance specifications. Currently, national standards, such as NTCIP, are still not complete enough to ensure successful system operation for all types of ITS systems. In addition, the regions have made significant investment in their respective ITS, electrical and electronic systems where procurement through performance specifications would be impractical due to system integration issues. WSDOTs experience has shown that for critical electronic components and software, it is best to test the operation of a specific manufactures product and then, if successful, specify that product for similar applications in the future until a comparable alternative becomes available that is capable of integrating with legacy equipment and software.

Ultimately, competitive bidding for software and equipment based on performance specifications provides the maximum benefit to the public. However, near term, due to the significant cost, effort, and expertise required to develop and maintain cost effective and timely performance specifications that would encompass the items listed in Appendix A, it is infeasible to pursue the performance specification approach without sacrificing function and/or logistics. WSDOT has discovered that even identifying a specific manufacturer and model number for each piece of software or equipment is challenging due to the synchronization and operational needs of WSDOT systems. There are adjoining jurisdictional differences, geographical differences, differences in the availability of the technology in each region, issues with the compatibility of equipment and software between similarly functioning systems from different manufacturers, mergers and acquisitions of existing manufacturers, and so on.

All of the items listed in **Appendix A** are essential for **one or more** of the following justifications:

1) **Synchronization based on function**
2) **Synchronization based on logistics**
3) **No equally suitable alternative exists**

WSDOT is working to standardize on the minimum number of software packages and equipment manufactures possible to accomplish its mission. Through research and experience, WSDOT has made a **significant investment in selecting software and equipment that synchronizes with existing equipment in a way that is necessary for the satisfactory operation existing facilities.** Logistically, the continued streamlining of an already **significant investment in equipment parts in**

inventory, training, maintenance, operational familiarity and software licensing expenditures represents an effective use of state and federal resources. In other cases, no equally suitable alternative exists.

The statewide blanket approval for the items listed in Appendix A will allow each region to select the most appropriate piece of software or equipment necessary to fulfill the WSDOT mission. As described previously, designers will be required to place justification in the project design file for the use of the selected proprietary item(s).

WSDOT is continually evaluating the needs of our systems and selecting equipment that best meets those needs. As new products become available which impact the statements and conclusions outlined above for a justifiable reason, WSDOT will revise or append Appendices A, B and C and process subsequent approvals as appropriate.

It should be noted that "Buy America" requirements are not covered or accounted for in this approval due to the broad scope nature of the proprietary equipment and categories. It is the responsibility of the Project Engineer or Project Manager to ensure that DOT Form 350-109 EF, Certificate of Materials Origin, is completed for all equipment being specified in the contract. Since WSDOT, as an agency, receives Federal Aid, this form is a requirement for all projects regardless of whether Federal Aid is being used specifically for the subject project.

For additional information please contact Ted Bailey, Traffic Operations Business Manager, Traffic Operations Division, 360-705-7286 or baileyte@wsdot.wa.gov.

TJB/fj

Attachments: Appendix A – Proprietary Item Categories with Manufacturers Approved for Use in Each Region (7 pages)
Appendix B – Proprietary Item Manufacturers A-Z (4 pages)
Appendix C – Proprietary Item Categories A-Z (3 pages)

CC w/attach: Don Petersen, FHWA
Terry Berends, North Central Region Traffic Engineer
Mark Leth, Northwest Region Traffic Engineer – NB82-120
Steve Kim, Olympic Region Traffic Engineer – 47440
Rick Keniston, Southwest Region Traffic Engineer – S-15
Glenn Wagemann, Eastern Region Traffic Engineer
Todd Daley, South Central Region Traffic Engineer (Acting)
Ricky Bhalla, ASDE
Greg Lippincott, ASDE
Jim Mahugh, ASDE
Scott Zeller, ASDE
Region Project Development Engineers

Appendix A - Proprietary Item Categories with Manufacturers Approved for Use in Each Region

Person Responsible For This Document:
Ted Bailey: 360-705-7286, baileyte@wsdot.wa.gov

Category / Item No.	Equipment Category *(with Approved Manufacturers)*	Region Approved to Use Proprietary Item						Website	Comments
		NWR	OR	SWR	NCR	SCR	ER		
1	**Accessible Pedestrian Signals (APS)**								
1.1	Polara Engineering, Inc. Equipment	X	X	X	X	X	X	www.polara.com/traffic.php	
2	**Battery Backup Systems (General)**								
2.1	Alpha Technologies, Ltd., Equipment	X	X	X	X	X	X	www.alpha.ca/web2/solutions/by-industry/traffic-its	
3	**Battery Backup Systems (Large Microwave Sites)**								
3.1	Argus Technologies Inc., Equipment	X	X	X	X	X	X		
4	**Battery Backup Systems (Small Microwave Sites)**								
4.1	Newmar Equipment	X	X	X	X	X	X	www.newmarpower.com/Integrated_Power_System/Integrated_Power_System.html	
5	**Closed Circuit Television Camera (CCTV) Equipment - Pan, Tilt, Zoom (PTZ) Installations**								
5.1	Cohu Camera Equipment	X	X	X		X		www.cohuhd.com	
5.2	Pelco Camera Equipment				X		X	www.pelco.com/	
6	**Closed Circuit Television Camera (CCTV) Equipment - Fixed Installations**								
6.1	Cohu Camera Equipment	X	X			X		www.cohuhd.com	
6.2	Panasonic Camera (Pelco Housing)			X*				www.panasonic.com/business/psna/products-surveillance-monitoring/index.aspx	*SWR for cameras
6.3	Pelco Camera Equipment			X*			X	www.pelco.com/	*SWR for housings only
6.4	Everfocus Electronics Corporation Equipment				X			www.everfocus.com/	
7	**Closed Circuit Television Camera (CCTV) Equipment (Attachment Hardware and Power Supply Only - No Camera)**								
7.1	Pelco Equipment	X	X	X	X	X	X	www.pelco.com/	
8	**Closed Circuit Television Camera (CCTV) Equipment - INFRARED**								
8.1	Bosch Equipment	X	X	X	X	X	X	us.boschsecurity.com	Cameras used for low light conditions
9	**Combiners, RS-422 (General)**	**Basic Definition:** Combines data from multiple sources into one stream.							
9.1	Vicon Equipment	X	X	X	X	X	X	www.vicon-security.com	
10	**Combiners, RS-422 (Camera Control Only)**								
10.1	Pelco Equipment	X			X	X	X	www.pelco.com	
10.2	Vicon Equipment		X	X				www.vicon-security.com	
11	**Concrete Universal Enclosures (CUE) and Concrete Walk-in Buildings**								
11.1	Emerson Network Power Pre-cast Concrete Walk-in Building	X	X	X	X	X	X	www.emersonnetworkpower.com	Marconi Communications, Inc. acquired by Emerson
12	**Conflict Monitors (General)**								
12.1	Eberle Design Incorporated (EDI) Equipment	X	X	X	X	X	X	www.editraffic.com	
13	**Conflict Monitors (For Signals with Flashing Yellow Arrow Operation)**								
13.1	Eberle Design Incorporated (EDI) Equipment	X	X	X	X	X	X	www.editraffic.com	
14	**Converters (CVISN Applications Only (RS232 to IP, Serial to Ethernet, IP to Fiber))**	**Basic Definition:** A device that converts data from analog to digital, digital to analog, or between hardware formats (e.g. Ethernet to Fiber).							
14.1	MOXA Equipment	X	X	X	X	X	X	www.moxa.com	
15	**Converters (HUB or Cabinet) - IP to Fiber**	**Basic Definition:** A device that converts data from analog to digital, digital to analog, or between hardware formats (e.g. Ethernet to Fiber).							
15.1	Black Box Equipment						X	www.blackbox.com	
15.2	Optelecom Equipment			X				www.tkhsecurity-usa.com/optelecom_C01/Modules/ItemBankC/ItemBankC_Module.asp?CustID=631&ComID=4&ModID=751&ItemID=0	Optelecom now part of TKH Security Solutions
15.3	B&B Electronics Equipment	X	X		X	X		www.bb-elec.com	
16	**Converters (HUB or Cabinet) - RS422 to RS232**	**Basic Definition:** A device that converts data from analog to digital or digital to analog.							
16.1	Black Box Equipment						X	www.blackbox.com	
16.2	B&B Electronics Equipment	X	X	X	X	X		www.bb-elec.com	

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		NWR	OR	SWR	NCR	SCR	ER		
17	**Converters (HUB or Cabinet) - Serial to IP**	**Basic Definition:** A device that converts data from analog to digital or digital to analog.							
17.1	Black Box Equipment						X	www.blackbox.com	
17.2	Siemens Equipment		X	X				w3.siemens.com/mcms/industrial-communication/en/rugged-communication/products/Pages/product-overview.aspx	Ruggedcom acquired by Siemens
17.3	MOXA Equipment					X		www.moxa.com	
17.4	B&B Electronics Equipment	X			X			www.bb-elec.com	
18	**Cross-Connect Panel**								
18.1	TE Connectivity Equipment	X	X	X	X	X	X	www.te.com/usa-en/products/networking.html	ADC now part of TE Connectivity
19	**Digital Video Recorder (DVR)**								
19.1	Mirasys (Dina/Polaris) Equipment	X	X	X		X	X	www.mirasys.com	
19.2	Indigovision Equipment				X			www.indigovision.com/products/recorders	
20	**Emergency Vehicle Preemption (EVP)**								
20.1	Global Traffic Technologies Equipment	X	X	X	X	X	X	www.gtt.com	Opticom sold to Global Traffic Technologies (GTT) by 3M
21	**Fiber Optic Patch Panels**								
21.1	Telect Equipment					X		www.telect.com	
21.2	Corning Equipment						X	catalog.corning.com/opcomm/en-US/catalog/CategoryBrowser.aspx?cid=fiber_optic_hardware_web&rq=Ancestor:fiber_optic_hardware_web	
21.3	TE Connectivity Equipment	X	X		X			www.te.com/usa-en/products/networking.html	ADC now part of TE Connectivity
21.4	Bejed Equipment			X				www.bejed.com	
22	**Fuse / Alarm Panel**								
22.1	Communications Network Systems, Inc. Equipment	X	X	X		X	X		
22.2	Telect Equipment				X			www.telect.com	
23	**Highway Advisory Radio (HAR)**								
23.1	M.H. Corbin Equipment	X	X	X	X	X	X	www.mhcorbin.com	Vaisala sold their HAR systems to MH Corbin
24	**Highway Advisory Radio (HAR) Antenna Equipment Only**								
24.1	Morad Antenna Equipment	X	X	X	X	X	X	www.morad.com	
25	**Horizontal Warning Gates**								
25.1	B&B Roadway Equipment	X	X	X	X	X	X	bbroadway.com/site/	
26	**Illumination (High Mast Lowering Device Systems)**								
26.1	Holophane Equipment	X	X	X	X	X	X	www.holophane.com	LD05 or current equivalent
27	**Internally Illuminated Signs (Below Grade or Ground Level for Delineation)**								
27.1	Traffic Sign Solutions Equipment	X	X	X	X	X	X	www.trafficsignsolutions.com	
28	**Illumination (Tunnel Lighting Control Systems)**								
28.1	PLC-Multipoint Inc. Equipment	X	X	X	X	X	X	www.plcmultipoint.com/	
29	**Illumination (Navigation Systems)**								
29.1	B&B Roadway Equipment	X	X	X	X	X	X	bbroadway.com/site/	
30	**Junction Box, Cable Vault and Pull Box Non-Slip Material for Lid and Frame**								
30.1	W.S. Molnar Company	X	X	X	X	X	X	www.slipnot.com	(SlipNOT Material)
31	**License Plate Reader (LPR)**								
31.1	3M Equipment	X	X	X	X	X	X	solutions.3m.com/wps/portal/3M/en_US/NA_Motor_Vehicle_Services_Systems/Motor_Vehicle_Industry_Solutions/product_catalog/3m-automatic-license-plate-recognition/fixed-alpr-camera-systems/	Pips Technology and its parent company FSTech acquired by 3M
32	**Media Access Control (MAC) Tracking Equipment**								
32.1	TrafficCast Equipment	X	X		X	X	X	www.trafficcast.com/	Bluetooth MAC Address Data Collection (BlueToad)
32.2	Digiwest Equipment			X				www.mybluemac.com	Bluetooth MAC Address Data Collection (BlueMAC)
33	**Modems - (For use with *State Owned* Twisted Pair Conductors)**								
33.1	GDI Communications Equipment	X	X	X	X	X	X	www.sgdi.com	Company name updated

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		NWR	OR	SWR	NCR	SCR	ER		
34	**Modems - Cellular (General Use) - Regular Phone line… (To your equipment it looks like a POT)**								
34.1	DIGI Equipment (Connectport VPN)	X	X	X	X	X		www.digi.com	
34.2	Telular Equipment (Data Remote)						X	www.telguard.com	Telguard Equipment (division of Telular)
35	**Modems - Dial Up (General Use)**								
35.1	MDS iNET (GE) Equipment	X	X	X			X	www.gedigitalenergy.com/Communications/catalog/iNETII.htm	MDS iNET acquired by GE
35.2	Raymar Information Technology Equipment				X	X		www.raymar-telenetics.com/	Raymar-Telenetics Equipment
36	**Modems - Dial Up (For Transportation Data Office (TDGO) Applications)**								
36.1	Infotec Equipment	X	X	X	X	X	X		
37	**Modems - IP Wireless (For Transportation Data Office (TDGO) Applications)**								
37.1	Sierra Wireless Equipment	X	X	X	X	X	X	www.sierrawireless.com	
38	**Modems - IP Wireless (General Use)**								
38.1	Sierra Wireless Equipment	X	X	X	X			www.sierrawireless.com	Raven and Airlink are products Manufactured by Sierra Wireless; Modems have to be aligned with the Carrier
38.2	DIGI Equipment (Connectport VPN)					X		www.digi.com	
38.3	MDS iNET Equipment						X	www.gedigitalenergy.com/Communications/catalog/iNETII.htm	MDS iNET acquired by GE
39	**Motion Sensor Equipment**								
39.1	The Crow Group Equipment	X	X	X	X	X	X	www.thecrowgroup.com/outdoor_detection/	MRX Platinum Series Detectors
40	**Portable Surveillance Trailers**								
40.1	Wanco Inc. Equipment	X	X	X	X	X	X	www.wanco.com/products/detail.php?prd_id=125&type_id=3	
41	**Power Supply Systems**								
41.1	Outback Power Systems Equipment	X	X	X	X	X	X	www.outbackpower.com/	
42	**Permanent Traffic Recorders**								
42.1	Jamar Technologies Inc. Equipment	X	X	X	X		X	www.jamartech.com/	
42.2	Diamond Traffic Products Equipment					X		diamondtraffic.com/	
43	**Permanent Traffic Recorders - For TDGO Applications**								
43.1	Diamond Traffic Products Equipment	X	X	X	X	X	X	diamondtraffic.com/	
44	**Railroad Pre-Emption**								
44.1	CTC, Inc. Equipment	X	X	X	X	X	X	ctcinc.com	**New Category**
45	**Rectangular Rapid Flashing Beacon Systems**								
45.1	Carmanah Equipment	X	X	X	X	X	X	carmanah.com/traffic/solar-flashing-beacons	Spot Devices acquired by Carmanah
46	**Roadway Weather Information Systems (RWIS) - Tower Structure**								
46.1	Glen Martin Engineering Equipment	X	X	X	X	X	X	glenmartin.com	Tower used by Vaisala for RWIS Systems
47	**Roadway Weather Information Systems (RWIS)**								
47.1	VAISALA Equipment	X	X	X	X	X	X	www.vaisala.com	
48	**Router (Ethernet)**								
48.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X	www.cisco.com	
49	**Sign Lighting Systems**								
49.1	LUMI TRAK Inc. Equipment	X	X	X	X	X	X	lumitrak.com	
50	**Signs (Mechanical - Rotating Drum)**								
50.1	Skyline Products Equipment	X	X	X	X	X	X	www.skylineproducts.com	
51	**Signs (Mounting Brackets)**								
51.1	Pelco Products, Inc. Equipment	X	X	X	X	X	X	www.pelcoinc.com/Traffic.aspx	
52	**Signs (with Embedded Flashing Lights)**								
52.1	TAPCO Products and Equipment	X	X	X	X	X	X	www.tapconet.com	
53	**Switch (Voice-over-IP)**								
53.1	Sonus Equipment	X	X	X	X	X	X	www.sonus.net	Sonus acquired Network Equipment Technologies, which had previously acquired Quintum Technologies.

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54	**Switch, Video or Data - (Ethernet)**	**Basic Definition:** Connects two segments of a network together that are using ethernet type connections.							
54.1	Siemens (Ruggedcom) Equipment	X	X	X				w3.siemens.com/mcms/industrial-communication/en/rugged-communication/products/Pages/product-overview.aspx	Ruggedcom acquired by Siemens
54.2	EtherWAN Systems, Inc. Equipment				X	X	X	us.etherwan.com	
55	**Switches, Video or Data - (Analog, Ethernet and Fiber) - For Department of Information Services (DIS) & IT Network Interface Applications - NOT for Closed Loop ITS Systems**	**Basic Definition:** Connects two segments of a network together that are using ethernet type connections.							
55.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X	www.cisco.com	
56	**Switches, Video or Data - (Analog, Ethernet and Fiber)**	**Basic Definition:** Connects two segments of a network together that are using ethernet type connections.							
56.1	Philips Equipment			X					
56.2	Interlogix Equipment				X	X		www.interlogix.com	International Fiber Systems (IFS) acquired by Interlogix
56.3	Vicon Equipment						X	www.vicon-security.com	
56.4	American Dynamics Equipment	X	X					www.americandynamics.net	Part of Tyco Security Products; owned by Tyco International
57	**Synchronous Optical NETwork (SONET) System**								
57.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X	www.cisco.com	
58	**Terminal Server (Field/Cabinet)**	**Basic Definition:** A device that aggregates multiple communication channels into one device.							
58.1	Siemens (Ruggedcom) Equipment	X	X	X	X	X	X	w3.siemens.com/mcms/industrial-communication/en/rugged-communication/products/Pages/product-overview.aspx	Ruggedcom acquired by Siemens
59	**Terminal Server (HUB)**	**Basic Definition:** A device that aggregates multiple communication channels into one device.							
59.1	MOXA Equipment			X		X		www.moxa.com	
59.2	Lantronix Equipment				X		X	www.lantronix.com	
59.3	DIGI Equipment	X	X					www.digi.com	
60	**Traffic Signal Controller Equipment and Software (170, 2070, 2070L(Light) and 2070N(Nema))**								
60.1	Siemens Equipment	X				X	X	w3.usa.siemens.com/mobility/us/en/urban-mobility/road-solutions/on-street-equipment/controllers/Pages/2070-controllers.aspx?istablet=true	Siemens appears to have discontinued the Eagle brand name.
60.2	Trafficware Equipment			X				www.trafficware.com	Trafficware has dropped the Naztec name as a stanalone brand.
60.3	McCain Equipment				X			www.mccain-inc.com/controllers.html	
60.4	Econolite Equipment		X					www.econolite.com	
61	**Traffic Signal Transfer Switch**								
61.1	CableQuest Equipment	X	X	X	X	X	X	www.cablequest.biz/traffic-signal-transfer-switches	GenTran reverted to CableQuest (TrafficTran line)
62	**Transceiver (Fiber Optic/Ethernet)**	**Basic Definition:** A device used to transmit and receive data over a fiber or ethernet/fiber network.							
62.1	Radiant Communications Corporation Equipment	X						www.rccfiber.com	
62.2	Siemens (Ruggedcom) Equipment		X	X				w3.siemens.com/mcms/industrial-communication/en/rugged-communication/products/Pages/product-overview.aspx	Ruggedcom acquired by Siemens
62.3	EtherWAN Systems Inc. Equipment				X	X	X	us.etherwan.com	
63	**Transceiver (Fiber Optic/Ethernet) - For Department of Information Services (DIS) & IT Network Interface Applications - NOT for Closed Loop ITS Systems**	**Basic Definition:** A device used to transmit and receive data over a fiber or ethernet/fiber network.							
63.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X	www.cisco.com	
64	**Transient Voltage / Surge Suppression Systems (Communication Applications)**								
64.1	Edco Equipment	X	X	X	X	X	X	www.emersonnetworkpower.com	Edco owned by Emerson Network Power
65	**Transient Voltage / Surge Suppression Systems (Line Applications)**								
65.1	Transtector Equipment	X	X	X	X	X	X	www.smithspower.com	Transtector owned by Smiths Power
66	**Transmission (Video or Data)**	**Basic Definition:** Transmits data from a field HUB or Cabinet back to the TMC.							
66.1	Artel Video Systems Equipment	X						www.commspecial.com	Deci-Mux; Communications Specialties, Inc. (CSI) acquired by Artel Video Systems
66.2	IndigoVision Equipment			X	X	X		www.indigovision.com/	
66.3	Siemens (Ruggedcom) Equipment		X					w3.siemens.com/mcms/industrial-communication/en/rugged-communication/products/Pages/product-overview.aspx	Ruggedcom acquired by Siemens
66.4	Optelecom Equipment						X	www.tkhsecurity-usa.com/optelecom_C01/Modules/ItemBankC/ItemBankC_Module.asp?CustID=631&ComID=4&ModID=751&ItemID=0	Optelecom now part of TKH Security Solutions

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		NWR	OR	SWR	NCR	SCR	ER		
67	**Transmitters and Receivers (Video and Data) - For Department of Information Services (DIS) & IT Network Interface Applications - NOT for Closed Loop ITS Systems**	**Basic Definition:** Transmits data from a field cabinet near the device back to the field HUB or Cabinet.							
67.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X	www.cisco.com	
68	**Transmitters and Receivers (Video and Data)**	**Basic Definition:** Transmits data from a field cabinet near the device back to the field HUB or Cabinet.							
68.1	Optelecom Equipment	X		X	X		X	www.tkhsecurity-usa.com/optelecom_C01/Modules/ItemBankC/ItemBankC_Module.asp?CustID=631&ComID=4&ModID=751&ItemID=0	Optelecom now part of TKH Security Solutions
68.2	Siemens (Ruggedcom) Equipment		X					w3.siemens.com/mcms/industrial-communication/en/rugged-communication/products/Pages/product-overview.aspx	Ruggedcom acquired by Siemens
68.3	Interlogix Equipment					X		www.interlogix.com	International Fiber Systems (IFS) acquired by Interlogix
69	**Variable Message Signs (VMS) - Blank out / CMS Applications**								
69.1	Wells Signs, Inc. Equipment	X	X	X	X	X	X	www.wellssigns.com	
70	**Variable Message Signs (VMS) - Front Access Type**								
70.1	Daktronics, Inc Equipment	X	X	X	X	X	X	www.daktronics.com	
71	**Variable Message Signs (VMS) - Walk-In Type**								
71.1	Daktronics, Inc Equipment	X	X	X	X	X	X	www.daktronics.com	
72	**Variable Message Signs (VMS) - Variable Speed Limit or Lane Utilization Type**								
72.1	Daktronics, Inc Equipment	X	X	X	X	X	X	www.daktronics.com	
73	**Vehicle Activated Traffic Control Signs (VACTS) - Automated Curve and Speed Warning Signs**								
73.1	Unipart Dorman Equipment	X	X	X	X	X	X	www.unipartdorman.com	Formerly Dorman Varitext
74	**Vehicle Detection (Infra-red Light)**								
74.1	CEOS Equipment	X	X	X	X	X	X	www.ceos.com.au	TIRTL Infrared Traffic Logger; Control Specialists Company may no longer be in business
75	**Vehicle Detection (Microwave (Speeds Only))**								
75.1	Speed Info Equipment	X	X	X	X	X	X	www.speedinfo.com	
76	**Vehicle Detection (Microwave (Speeds, Counts and Classification))**								
76.1	Wavetronix Equipment	X	X	X	X	X	X	www.wavetronix.com	SmartSensor HD is the current version
77	**Vehicle Detection (Video)**								
77.1	FLIR Equipment	X	X	X	X	X	X	www.flir.com	FLIR acquired Traficon
78	**Vehicle Detection (Weigh-in-Motion (Transportation Data Office (TDGO) Applications))**								
78.1	International Road Dynamics (IRD) Equipment	X	X	X	X	X	X	www.irdinc.com	TDGO Systems are managed and operated separately from the remainder of the WSDOT ITS.
79	**Vehicle Detectors (Loops)**								
79.1	Reno A&E Equipment	X	X	X	X	X	X	www.renoae.com	
80	**Vehicle Detectors (Magnetometer with Wireless Communications)**								
80.1	SENSYS Networks	X	X	X	X	X	X	www.sensysnetworks.com	

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Category / Item No.	Equipment Category *(with Approved Manufacturers)*	Region Approved to Use Proprietary Item						Website	Comments
		NWR	OR	SWR	NCR	SCR	ER		
81	**Weigh-in-Motion(WIM) System - (SubSystem Component Description)**								
81.1	Cohu Equipment - (Security Camera Systems)	X	X	X	X	X	X	www.cohuhd.com	
81.2	Hoffman Equipment - (Commercial Vehicle (CV) Reader Controller Cabinet)	X	X	X	X	X	X	www.pentairprotect.com/hoffman	Hoffman brand owned by Pentair
81.3	International Road Dynamics (IRD) Equipment - (Weigh-In-Motion(WIM) Controller System)	X	X	X	X	X	X	www.irdinc.com	
81.4	International Road Dynamics (IRD) Equipment - (Manual Override Console)	X	X	X	X	X	X	www.irdinc.com	
81.5	International Road Dynamics (IRD) Equipment - (Load Cell Scale)	X	X	X	X	X	X	www.irdinc.com	
81.6	Measurement Specialties Equipment - (Piezoelectric Sensors)	X	X	X	X	X	X	www.meas-spec.com	
81.7	Trigg Industries Equipment - (Overheight Detectors)	X	X	X	X	X	X	www.triggindustries.com	
81.8	IQeye Equipment - (Enforcement Camera System)	X	X	X	X	X	X	www.vicon-security.com	IQeye and IQinVision acquired by Vicon Security
81.9	International Road Dynamics (IRD) Equipment - (Enforcement Camera System Assembly)	X	X	X	X	X	X	www.irdinc.com	
81.10	Bosch Security Equipment - (Infrared Illuminator)	X	X	X	X	X	X	us.boschsecurity.com	Extreme CCTV acquired by Bosch Security
81.11	Telematics Wireless USA Corp Equipment - (Automatic Vehicle Identification (AVI) System)	X	X	X	X	X	X	www.telematics-wireless.com	
81.12	Sinclair Technologies Inc. - (Antennas)	X	X	X	X	X	X	www.sinctech.com	
81.13	International Road Dynamics (IRD) Equipment - (Outdoor Enclosure and Other Weigh-In-Motion System Components)	X	X	X	X	X	X	www.irdinc.com	
81.14	International Road Dynamics (IRD) Equipment -Bending Plate – IRD - International Road Dynamics Corp.	X	X	X	X	X	X	www.irdinc.com	
81.15	Orange Traffic Equipment (Lane Control System)	X	X	X	X	X	X	www.orangetraffic.com	Tassimco Technologies has changed its name to Orange Traffic
81.16	PIPS Technology Equipment - (License Plate Reader (LPR) Cameras)	X	X	X	X	X	X	solutions.3m.com/wps/portal/3M/en_US/NA_Motor_Vehicle_Services_Systems/Motor_Vehicle_Industry_Solutions/product_catalog/3m-automatic-license-plate-recognition/fixed-alpr-camera-systems/	Pips Technology and its parent company FSTech acquired by 3M
81.17	Kistler Instrument Corp. Equipment - (Lineas Quartz Sensors)	X	X	X	X	X	X	www.kistler.com/us/en/	
81.18	International Road Dynamics (IRD) Equipment - (CVReader and Confirmation Reader Systems)	X	X	X	X	X	X	www.irdinc.com	
81.19	International Road Dynamics (IRD) Equipment - (CVOCS)	X	X	X	X	X	X	www.irdinc.com	
82	**Video Distribution Amplifier**								
82.1	Interlogix Equipment	X				X	X	www.interlogix.com	GE Security Equipment acquired by Interlogix
82.2	Kramer Electronics Equipment		X		X			www.kramerelectronics.com	
82.3	Pelco Equipment			X				www.pelco.com/	
83	**Video and Data Servers; Video Encoder/Decoder Equipment (Fixed Snap Shot Cameras)**	**Basic Definition:** Compresses or ecompress a video signal to reduce bandwidth usage during Transmission.							
83.1	Axis Communications Equipment	X	X	X	X	X	X	www.axis.com	
84	**Video and Data Servers; Video Encoder/Decoder Equipment (Live Streaming Video Cameras)**	**Basic Definition:** Compresses or decompress a video signal to reduce bandwidth usage during Transmission.							
84.1	Radiant Communications Corporation Equipment	X						www.rccfiber.com	
84.2	IndigoVision Equipment		X		X	X		www.indigovision.com/	
84.3	IONODES Equipment			X				www.ionodes.com	***NEW*** ODOT required for compatibility with their video streams.
84.4	Optelecom Equipment						X	www.tkhsecurity-usa.com/optelecom_C01/Modules/ItemBankC/ItemBankC_Module.asp?CustID=631&ComID=4&ModID=751&ItemID=0	Optelecom now part of TKH Security Solutions
85	**Wireless Communication (170 Traffic Signal Controller Interconnect)**								
85.1	Encom Wireless Equipment	X	X	X	X	X	X	www.encomwireless.com	
86	**Wireless Communication Antennas (Traffic Signal Controller Interconnect Applications)**								
86.1	Astron Wireless Technologies, Inc. Equipment	X	X	X	X	X	X	www.astronwireless.com	Low Profile Antennas
87	**Wireless Communication (900 Mhz non-line of Sight Ethernet or Non-Video Data)**								
87.1	MDS iNET Equipment	X	X	X	X	X	X	www.gedigitalenergy.com/Communications/catalog/iNETII.htm	MDS iNET acquired by GE
88	**Wireless Communication (Antennas)**								
88.1	Andrew Antenna Equipment				X			www.commscope.com	Andrew Antennas acquired by CommScope
88.2	MaxRad Antenna Equipment	X	X	X		X	X	www.antenna.com	MaxRad brand name appears to have been retired by PCTEL
89	**Wireless Communication (Backbone, Point-to-Point Long Range)**								
89.1	Alcatel-Lucent Equipment (Microwave Radio)	X	X	X	X	X	X	www.alcatel-lucent.com/solutions/microwave-transmission	
90	**Wireless Communication (IP Wireless and 2070 Traffic Signal Controller Interconnect)**								
90.1	Encom Wireless Equipment				X	X		www.encomwireless.com	
90.2	MDS iNET Equipment	X	X	X			X	www.gedigitalenergy.com/Communications/catalog/iNETII.htm	MDS iNET acquired by GE
91	**Wireless Communication (Short, Mid and Long Range)**								
91.1	Solectek Equipment	X	X	X	X	X	X	www.solectek.com	
92	**Wireless Communication (TDGO Applications)**								
92.1	Exalt Communications, Inc. Equipment	X	X	X	X	X	X	www.exaltcom.com	**New Category**

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Category / Item No.	Equipment Category *(with Approved Manufacturers)*	Region Approved to Use Proprietary Item						Website	Comments
		NWR	OR	SWR	NCR	SCR	ER		
93	**Wireless Communication (Towers and non-radio Equipment)**								
93.1	Valmont Equipment	X	X	X	X	X	X	www.valmont.com	
94	**Wireless Communications Wide Area Data (Non line of sight, Omni)**								
94.1	IP MobileNet Equipment	X	X	X	X	X	X	www.ipmn.com	
95	**Wireless Digital Communication (Video and Non-Video Data)**								
95.1	Encom Equipment	X	X	X		X		www.encomwireless.com	
95.2	Harris Equipment				X			pspc.harris.com	
95.3	Verint Equipment						X	www.verint.com	
96	**Wireless Mesh Communication Systems**								
96.1	Firetide Equipment	X	X	X	X	X	X	www.firetide.com	Firetide is owned by UNICOM Global
97	**Switches, Video and Data - (Analog, Ethernet and Fiber) - For Transmitting Video externally through a web service.**								
97.1	Blonder Tongue Equipment	X	X	X	X	X	X	www.blondertongue.com	
98	**Wireless Communication Monitoring**								
98.1	Fial, Inc. Equipment	X	X	X	X	X	X	www.fial.com	**New Category**

Appendix B - Proprietary Item Manufacturers A to Z

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Item Number	Manufacturer Name	Region Approved to Use Proprietary Item					
		NWR	OR	SWR	NCR	SCR	ER
31.1	3M Equipment	X	X	X	X	X	X
89.1	Alcatel-Lucent Equipment (Microwave Radio)	X	X	X	X	X	X
2.1	Alpha Technologies, Ltd., Equipment	X	X	X	X	X	X
56.4	American Dynamics Equipment	X	X				
88.1	Andrew Antenna Equipment				X		
3.1	Argus Technologies Inc., Equipment	X	X	X	X	X	X
66.1	Artel Video Systems Equipment	X					
86.1	Astron Wireless Technologies, Inc. Equipment	X	X	X	X	X	X
83.1	Axis Communications Equipment	X	X	X	X	X	X
15.3	B&B Electronics Equipment	X	X		X	X	
16.2	B&B Electronics Equipment	X	X	X	X	X	
17.4	B&B Electronics Equipment	X			X		
25.1	B&B Roadway Equipment	X	X	X	X	X	X
29.1	B&B Roadway Equipment	X	X	X	X	X	X
21.4	Bejed Equipment			X			
15.1	Black Box Equipment						X
16.1	Black Box Equipment						X
17.1	Black Box Equipment						X
97.1	Blonder Tongue Equipment	X	X	X	X	X	X
8.1	Bosch Equipment	X	X	X	X	X	X
81.10	Bosch Security Equipment - (Infrared Illuminator)	X	X	X	X	X	X
61.1	CableQuest Equipment	X	X	X	X	X	X
45.1	Carmanah Equipment	X	X	X	X	X	X
74.1	CEOS Equipment	X	X	X	X	X	X
48.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X
55.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X
57.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X
63.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X
67.1	Cisco Systems Inc. Equipment	X	X	X	X	X	X
5.1	Cohu Camera Equipment	X	X	X		X	
6.1	Cohu Camera Equipment	X	X			X	
81.1	Cohu Equipment - (Security Camera Systems)	X	X	X	X	X	X
22.1	Communications Network Systems, Inc. Equipment	X	X	X		X	X
21.2	Corning Equipment						X
44.1	CTC, Inc. Equipment	X	X	X	X	X	X
70.1	Daktronics, Inc Equipment	X	X	X	X	X	X
71.1	Daktronics, Inc Equipment	X	X	X	X	X	X
72.1	Daktronics, Inc Equipment	X	X	X	X	X	X
42.2	Diamond Traffic Products Equipment					X	
43.1	Diamond Traffic Products Equipment	X	X	X	X	X	X
59.3	DIGI Equipment	X	X				
34.1	DIGI Equipment (Connectport VPN)	X	X	X	X	X	
38.2	DIGI Equipment (Connectport VPN)					X	

Item Number	Manufacturer Name	NWR	OR	SWR	NCR	SCR	ER
32.2	Digiwest Equipment			X			
12.1	Eberle Design Incorporated (EDI) Equipment	X	X	X	X	X	X
13.1	Eberle Design Incorporated (EDI) Equipment	X	X	X	X	X	X
60.4	Econolite Equipment		X				
64.1	Edco Equipment	X	X	X	X	X	X
11.1	Emerson Network Power Pre-cast Concrete Walk-in Building	X	X	X	X	X	X
95.1	Encom Equipment	X	X	X		X	
85.1	Encom Wireless Equipment	X	X	X	X	X	X
90.1	Encom Wireless Equipment				X	X	
62.3	EtherWAN Systems Inc. Equipment				X	X	X
54.2	EtherWAN Systems, Inc. Equipment				X	X	X
6.4	Everfocus Electronics Corporation Equipment				X		
92.1	Exalt Communications, Inc. Equipment	X	X	X	X	X	X
98.1	Fial, Inc. Equipment	X	X	X	X	X	X
96.1	Firetide Equipment	X	X	X	X	X	X
77.1	FLIR Equipment	X	X	X	X	X	X
33.1	GDI Communications Equipment	X	X	X	X	X	X
46.1	Glen Martin Engineering Equipment	X	X	X	X	X	X
20.1	Global Traffic Technologies Equipment	X	X	X	X	X	X
95.2	Harris Equipment				X		
81.2	Hoffman Equipment - (Commercial Vehicle (CV) Reader Controller Cabinet)	X	X	X	X	X	X
26.1	Holophane Equipment	X	X	X	X	X	X
19.2	Indigovision Equipment				X		
66.2	IndigoVision Equipment			X	X	X	
84.2	IndigoVision Equipment		X		X	X	
36.1	Infotec Equipment	X	X	X	X	X	X
56.2	Interlogix Equipment				X	X	
68.3	Interlogix Equipment					X	
82.1	Interlogix Equipment	X				X	X
78.1	International Road Dynamics (IRD) Equipment	X	X	X	X	X	X
81.19	International Road Dynamics (IRD) Equipment - (CVOCS)	X	X	X	X	X	X
81.18	International Road Dynamics (IRD) Equipment - (CVReader and Confirmation Reader Systems)	X	X	X	X	X	X
81.9	International Road Dynamics (IRD) Equipment - (Enforcement Camera System Assembly)	X	X	X	X	X	X
81.5	International Road Dynamics (IRD) Equipment - (Load Cell Scale)	X	X	X	X	X	X
81.4	International Road Dynamics (IRD) Equipment - (Manual Override Console)	X	X	X	X	X	X
81.13	International Road Dynamics (IRD) Equipment - (Outdoor Enclosure and Other Weigh-In-Motion System Components)	X	X	X	X	X	X
81.3	International Road Dynamics (IRD) Equipment - (Weigh-In-Motion(WIM) Controller System)	X	X	X	X	X	X
81.14	International Road Dynamics (IRD) Equipment -Bending Plate – IRD - International Road Dynamics Corp.	X	X	X	X	X	X
84.3	IONODES Equipment			X			
94.1	IP MobileNet Equipment	X	X	X	X	X	X
81.8	IQeye Equipment - (Enforcement Camera System)	X	X	X	X	X	X
42.1	Jamar Technologies Inc. Equipment	X	X	X	X		X
81.17	Kistler Instrument Corp. Equipment - (Lineas Quartz Sensors)	X	X	X	X	X	X
82.2	Kramer Electronics Equipment		X		X		
59.2	Lantronix Equipment				X		X
49.1	LUMI TRAK Inc. Equipment	X	X	X	X	X	X
23.1	M.H. Corbin Equipment	X	X	X	X	X	X
88.2	MaxRad Antenna Equipment	X	X	X		X	X

Item Number	Manufacturer Name	NWR	OR	SWR	NCR	SCR	ER
60.3	McCain Equipment				**X**		
35.1	MDS iNET (GE) Equipment	**X**	**X**	**X**			**X**
38.3	MDS iNET Equipment						**X**
87.1	MDS iNET Equipment	**X**	**X**	**X**	**X**	**X**	**X**
90.2	MDS iNET Equipment	**X**	**X**	**X**			**X**
81.6	Measurement Specialties Equipment - (Piezoelectric Sensors)	**X**	**X**	**X**	**X**	**X**	**X**
19.1	Mirasys (Dina/Polaris) Equipment	**X**	**X**	**X**		**X**	**X**
24.1	Morad Antenna Equipment	**X**	**X**	**X**	**X**	**X**	**X**
14.1	MOXA Equipment	**X**	**X**	**X**	**X**	**X**	**X**
17.3	MOXA Equipment					**X**	
59.1	MOXA Equipment			**X**		**X**	
4.1	Newmar Equipment	**X**	**X**	**X**	**X**	**X**	**X**
15.2	Optelecom Equipment			**X**			
66.4	Optelecom Equipment						**X**
68.1	Optelecom Equipment	**X**		**X**	**X**		**X**
84.4	Optelecom Equipment						**X**
81.15	Orange Traffic Equipment (Lane Control System)	**X**	**X**	**X**	**X**	**X**	**X**
41.1	Outback Power Systems Equipment	**X**	**X**	**X**	**X**	**X**	**X**
6.2	Panasonic Camera (Pelco Housing)			**X***			
5.2	Pelco Camera Equipment				**X**		**X**
6.3	Pelco Camera Equipment			**X***			**X**
10.1	Pelco Equipment	**X**			**X**	**X**	**X**
82.3	Pelco Equipment			**X**			
7.1	Pelco Equipment	**X**	**X**	**X**	**X**	**X**	**X**
51.1	Pelco Products, Inc. Equipment	**X**	**X**	**X**	**X**	**X**	**X**
56.1	Philips Equipment			**X**			
81.16	PIPS Technology Equipment - (License Plate Reader (LPR) Cameras)	**X**	**X**	**X**	**X**	**X**	**X**
28.1	PLC-Multipoint Inc. Equipment	**X**	**X**	**X**	**X**	**X**	**X**
1.1	Polara Engineering, Inc. Equipment	**X**	**X**	**X**	**X**	**X**	**X**
84.1	Radiant Communications Corporation Equipment	**X**					
62.1	Radiant Communications Corporation Equipment	**X**					
35.2	Raymar Information Technology Equipment				**X**	**X**	
79.1	Reno A&E Equipment	**X**	**X**	**X**	**X**	**X**	**X**
80.1	SENSYS Networks	**X**	**X**	**X**	**X**	**X**	**X**
54.1	Siemens (Ruggedcom) Equipment	**X**	**X**	**X**			
58.1	Siemens (Ruggedcom) Equipment	**X**	**X**	**X**	**X**	**X**	**X**
62.2	Siemens (Ruggedcom) Equipment		**X**	**X**			
66.3	Siemens (Ruggedcom) Equipment		**X**				
68.2	Siemens (Ruggedcom) Equipment		**X**				
17.2	Siemens Equipment		**X**	**X**			
60.1	Siemens Equipment	**X**				**X**	**X**
37.1	Sierra Wireless Equipment	**X**	**X**	**X**	**X**	**X**	**X**
38.1	Sierra Wireless Equipment	**X**	**X**	**X**	**X**		
81.12	Sinclair Technologies Inc. - (Antennas)	**X**	**X**	**X**	**X**	**X**	**X**
50.1	Skyline Products Equipment	**X**	**X**	**X**	**X**	**X**	**X**
91.1	Solectek Equipment	**X**	**X**	**X**	**X**	**X**	**X**
53.1	Sonus Equipment	**X**	**X**	**X**	**X**	**X**	**X**
75.1	Speed Info Equipment	**X**	**X**	**X**	**X**	**X**	**X**

Item Number	Manufacturer Name	NWR	OR	SWR	NCR	SCR	ER
52.1	TAPCO Products and Equipment	**X**	**X**	**X**	**X**	**X**	**X**
18.1	TE Connectivity Equipment	**X**	**X**	**X**	**X**	**X**	**X**
21.3	TE Connectivity Equipment	**X**	**X**		**X**		
21.1	Telect Equipment					**X**	
22.2	Telect Equipment				**X**		
81.11	Telematics Wireless USA Corp Equipment - (Automatic Vehicle Identification (AVI) System)	**X**	**X**	**X**	**X**	**X**	**X**
34.2	Telular Equipment (Data Remote)						**X**
39.1	The Crow Group Equipment	**X**	**X**	**X**	**X**	**X**	**X**
27.1	Traffic Sign Solutions Equipment	**X**	**X**	**X**	**X**	**X**	**X**
32.1	TrafficCast Equipment	**X**	**X**		**X**	**X**	**X**
60.2	Trafficware Equipment			**X**			
65.1	Transtector Equipment	**X**	**X**	**X**	**X**	**X**	**X**
81.7	Trigg Industries Equipment - (Overheight Detectors)	**X**	**X**	**X**	**X**	**X**	**X**
73.1	Unipart Dorman Equipment	**X**	**X**	**X**	**X**	**X**	**X**
47.1	VAISALA Equipment	**X**	**X**	**X**	**X**	**X**	**X**
93.1	Valmont Equipment	**X**	**X**	**X**	**X**	**X**	**X**
95.3	Verint Equipment						**X**
9.1	Vicon Equipment	**X**	**X**	**X**	**X**	**X**	**X**
10.2	Vicon Equipment		**X**	**X**			
56.3	Vicon Equipment						**X**
30.1	W.S. Molnar Company	**X**	**X**	**X**	**X**	**X**	**X**
40.1	Wanco Inc. Equipment	**X**	**X**	**X**	**X**	**X**	**X**
76.1	Wavetronix Equipment	**X**	**X**	**X**	**X**	**X**	**X**
69.1	Wells Signs, Inc. Equipment	**X**	**X**	**X**	**X**	**X**	**X**

Appendix C - Equipment Categories A to Z

Person Responsible For This Document:
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Category No.	Equipment Category	Comments
1	Accessible Pedestrian Signals (APS)	
2	Battery Backup Systems (General)	
3	Battery Backup Systems (Large Microwave Sites)	
4	Battery Backup Systems (Small Microwave Sites)	
5	Closed Circuit Television Camera (CCTV) Equipment - Pan, Tilt, Zoom (PTZ) Installations	
6	Closed Circuit Television Camera (CCTV) Equipment - Fixed Installations	
7	Closed Circuit Television Camera (CCTV) Equipment (Attachment Hardware and Power Supply Only - No Camera)	
8	Closed Circuit Television Camera (CCTV) Equipment - INFRARED	
9	Combiners, RS-422 (General)	**Basic Definition:** Combines data from multiple sources into one stream.
10	Combiners, RS-422 (Camera Control Only)	
11	Concrete Universal Enclosures (CUE) and Concrete Walk-in Buildings	
12	Conflict Monitors (General)	
13	Conflict Monitors (For Signals with Flashing Yellow Arrow Operation)	
14	Converters (CVISN Applications Only (RS232 to IP, Serial to Ethernet, IP to Fiber))	**Basic Definition:** A device that converts data from analog to digital, digital to analog, or between hardware formats (e.g. Ethernet to Fiber).
15	Converters (HUB or Cabinet) - IP to Fiber	**Basic Definition:** A device that converts data from analog to digital, digital to analog, or between hardware formats (e.g. Ethernet to Fiber).
16	Converters (HUB or Cabinet) - RS422 to RS232	**Basic Definition:** A device that converts data from analog to digital or digital to analog.
17	Converters (HUB or Cabinet) - Serial to IP	**Basic Definition:** A device that converts data from analog to digital or digital to analog.
18	Cross-Connect Panel	
19	Digital Video Recorder (DVR)	
20	Emergency Vehicle Preemption (EVP)	
21	Fiber Optic Patch Panels	
22	Fuse / Alarm Panel	
23	Highway Advisory Radio (HAR)	
24	Highway Advisory Radio (HAR) Antenna Equipment Only	
25	Horizontal Warning Gates	
26	Illumination (High Mast Lowering Device Systems)	
27	Internally Illuminated Signs (Below Grade or Ground Level for Delineation)	
28	Illumination (Tunnel Lighting Control Systems)	
29	Illumination (Navigation Systems)	
30	Junction Box, Cable Vault and Pull Box Non-Slip Material for Lid and Frame	
31	License Plate Reader (LPR)	
32	Media Access Control (MAC) Tracking Equipment	
33	Modems - (For use with *State Owned* Twisted Pair Conductors)	
34	Modems - Cellular (General Use) - Regular Phone line… (To your equipment it looks like a POT)	
35	Modems - Dial Up (General Use)	
36	Modems - Dial Up (For Transportation Data Office (TDGO) Applications)	
37	Modems - IP Wireless (For Transportation Data Office (TDGO) Applications)	
38	Modems - IP Wireless (General Use)	
39	Motion Sensor Equipment	
40	Portable Surveillance Trailers	
41	Power Supply Systems	
42	Permanent Traffic Recorders	
43	Permanent Traffic Recorders - For TDGO Applications	
44	Railroad Pre-Emption	

Category No.	Equipment Category	Comments
45	Rectangular Rapid Flashing Beacon Systems	
46	Roadway Weather Information Systems (RWIS) - Tower Structure	
47	Roadway Weather Information Systems (RWIS)	
48	Router (Ethernet)	
49	Sign Lighting Systems	
50	Signs (Mechanical - Rotating Drum)	
51	Signs (Mounting Brackets)	
52	Signs (with Embedded Flashing Lights)	
53	Switch (Voice-over-IP)	
54	Switch, Video or Data - (Ethernet)	**Basic Definition:** Connects two segments of a network together that are using ethernet type connections.
55	Switches, Video or Data - (Analog, Ethernet and Fiber) - For Department of Information Services (DIS) & IT Network Interface Applications - NOT for Closed Loop ITS Systems	**Basic Definition:** Connects two segments of a network together that are using ethernet type connections.
56	Switches, Video or Data - (Analog, Ethernet and Fiber)	**Basic Definition:** Connects two segments of a network together that are using ethernet type connections.
57	Synchronous Optical NETwork (SONET) System	
58	Terminal Server (Field/Cabinet)	**Basic Definition:** A device that aggregates multiple communication channels into one device.
59	Terminal Server (HUB)	**Basic Definition:** A device that aggregates multiple communication channels into one device.
60	Traffic Signal Controller Equipment and Software (170, 2070, 2070L(Light) and 2070N(Nema))	
61	Traffic Signal Transfer Switch	
62	Transceiver (Fiber Optic/Ethernet)	**Basic Definition:** A device used to transmit and receive data over a fiber or ethernet/fiber network.
63	Transceiver (Fiber Optic/Ethernet) - For Department of Information Services (DIS) & IT Network Interface Applications - NOT for Closed Loop ITS Systems	**Basic Definition:** A device used to transmit and receive data over a fiber or ethernet/fiber network.
64	Transient Voltage / Surge Suppression Systems (Communication Applications)	
65	Transient Voltage / Surge Suppression Systems (Line Applications)	
66	Transmission (Video or Data)	**Basic Definition:** Transmits data from a field HUB or Cabinet back to the TMC.
67	Transmitters and Receivers (Video and Data) - For Department of Information Services (DIS) & IT Network Interface Applications - NOT for Closed Loop ITS Systems	**Basic Definition:** Transmits data from a field cabinet near the device back to the field HUB or Cabinet.
68	Transmitters and Receivers (Video and Data)	**Basic Definition:** Transmits data from a field cabinet near the device back to the field HUB or Cabinet.
69	Variable Message Signs (VMS) - Blank out / CMS Applications	
70	Variable Message Signs (VMS) - Front Access Type	
71	Variable Message Signs (VMS) - Walk-In Type	
72	Variable Message Signs (VMS) - Variable Speed Limit or Lane Utilization Type	
73	Vehicle Activated Traffic Control Signs (VACTS) - Automated Curve and Speed Warning Signs	
74	Vehicle Detection (Infra-red Light)	
75	Vehicle Detection (Microwave (Speeds Only))	
76	Vehicle Detection (Microwave (Speeds, Counts and Classification))	
77	Vehicle Detection (Video)	
78	Vehicle Detection (Weigh-in-Motion (Transportation Data Office (TDGO) Applications))	
79	Vehicle Detectors (Loops)	
80	Vehicle Detectors (Magnetometer with Wireless Communications)	
81	Weigh-in-Motion(WIM) System - (SubSystem Component Description)	
82	Video Distribution Amplifier	
83	Video and Data Servers; Video Encoder/Decoder Equipment (Fixed Snap Shot Cameras)	**Basic Definition:** Compresses or decompress a video signal to reduce bandwidth usage during Transmission.
84	Video and Data Servers; Video Encoder/Decoder Equipment (Live Streaming Video Cameras)	**Basic Definition:** Compresses or decompress a video signal to reduce bandwidth usage during Transmission.
85	Wireless Communication (170 Traffic Signal Controller Interconnect)	

Category No.	Equipment Category	Comments
86	Wireless Communication Antennas (Traffic Signal Controller Interconnect Applications)	
87	Wireless Communication (900 Mhz non-line of Sight Ethernet or Non-Video Data)	
88	Wireless Communication (Antennas)	
89	Wireless Communication (Backbone, Point-to-Point Long Range)	
90	Wireless Communication (IP Wireless and 2070 Traffic Signal Controller Interconnect)	
91	Wireless Communication (Short, Mid and Long Range)	
92	Wireless Communication (TDGO Applications)	
93	Wireless Communication (Towers and non-radio Equipment)	
94	Wireless Communications Wide Area Data (Non line of sight, Omni)	
95	Wireless Digital Communication (Video and Non-Video Data)	
96	Wireless Mesh Communication Systems	
97	Switches, Video and Data - (Analog, Ethernet and Fiber) - For Transmitting Video externally through a web service.	
98	Wireless Communication Monitoring	