

RESPONSE 2 Comments from Industry Review – 7820000

Frances Thomas

File: 7820000 Intelligent Transportation Systems – Video Equipment
Username: Frances Thomas
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UserTel: 414-4101
Date: Friday, November 18, 2005
Time: 10:06:29 AM

Comments:

782-2.2.3 - description should include the word 'cube' (i.e., "rear projection video displays (cubes) arranged in a matrix (wall), to be consistent with pay item structure in BOE).

ITS SECTION RESPONSE: Comment was accepted and incorporated into the document.

Chris Birosak

File: 7820000 Intelligent Transportation Systems – Video Equipment
Username:
UserEmail: chris.birosak@dot.state.fl.us
UserTel: 863-519-2507, SC 557-2507
Date: Wednesday, November 30, 2005
Time: 02:15:13 PM

Comments:

1) Section 782-1.2.1, this section requires the camera to be compatible with the Department's SunGuide Software. This will require a technical special provision to be written for all local signal system projects that have cameras since those systems do not utilize the SunGuide Software for operation of their cameras. I suggest this section be modified to include the words, "unless other camera operating software is indicated on the Plans or in the contract documents." If a local system already has camera operating software then a plan note can be used to state the name of the software the camera must be compatible with, if new camera operating software is required as part of a new local system then the requirements can be placed into the contract documents (minimum technical requirements, or technical special provision).

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

2) Section 782-1.4, this section requires testing procedures to be submitted for review and approval. This will require additional man hours from the contractor and the FDOT to get through the approval process. Also, who will be responsible for reviewing and approving this technical material? The Engineer in the Construction Office is usually not

qualified and this requirement should not be Traffic Operations responsibility but it probably will end up in our office. I suggest testing procedures be written for the cameras and included in this section. The contractors and the Engineer will know up front what is required and no formal approval process will be needed. The testing procedures should be generic so they can be used on local signal system projects.

ITS SECTION RESPONSE: Comment accepted. Document changed to add a list of vital equipment functions that must be verified after field installation is complete.

Bill Cook

I would suggest that you add a paragraph that refers to surge protection for the camera and video controller. It can be simple and concise but clearly states:- * Surge protection must be installed at both the camera and cabinet on the Video, Camera Power and PTZ circuits. For details of the surge protectors see specification

Thank you for the opportunity to contribute to the specification, however if you require any additional explanation or input, please do not hesitate to contact me.

Bill Cook
Sales Engineer
Atlantic Scientific Corp
321-308-2111 (direct) or 800-544-4737x134

ITS SECTION RESPONSE: Comment noted. The requirement to protect all power, video and data lines at an installation is actually contained in the grounding portion of Section 780, Intelligent Transportation Systems – General Requirements.

Bob Dion

File: 7820000 Intelligent Transportation Systems – Video Equipment
Username: Bob Dion
UserEmail: bob_dion@urscorp.com
UserTel: 386-740-0665
Date: Wednesday, December 07, 2005
Time: 02:57:24 PM

Comments:

782-3.1 first paragraph: A Warranty/Maintenance bond is needed, see 611-5.1 in the spec book and/or 580-5 of the Supplemental Specifications, as examples for one. Last sentence in the first paragraph of 782-3.1; The reference to Section 611-5.2 should be to Article 611-5, or at the least change section to Subarticle.

ITS SECTION RESPONSE: Comment noted. Document changed. The warranty section was rewritten so that it conforms to the Department's basic contract requirements.

Bijan Behzadi, P.E., PTOE, Phone #: 813-975-6733

Please define CCTV for Section 782.

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

Section 782-1.1: Consider adding the term “and CCTV camera control data” between the words “images” and “can” since both video and data will be transmitted.

ITS SECTION RESPONSE: Comment accepted. Text added to require that the field equipment respond to camera control signals from the operator.

Section 782-1.2: Consider separating switchover into switch over.

ITS SECTION RESPONSE: Comment not accepted. “Switchover” in this context is a noun instead of a verb. The usage is correct.

Section 782-1.2: Consider adding a “s” to the word “mode” in bullet number 3.

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

Section 782-1.2: Review the requirements for digital and optical zoom to ensure the CCTV can view a distance of ½ miles since most CCTV camera spacing along both freeway and arterial systems is about 1 mile.

ITS SECTION RESPONSE: Comment noted. Cameras described are generally capable of viewing these distances, however, their ability to do so is more dependent upon placement, height, environmental conditions, and other variables. Also, design considerations and guidelines for placement to ensure complete coverage, given a certain physical spacing of sites, is actually better addressed in the *Plans Preparation Manual*.

Section 782-1.2.5: Consider adding the term “Ethernet” to listed connectivity options.

ITS SECTION RESPONSE: Comment noted. Document changed to require that the CCTV camera support the communication links shown in the plans. This should provide the designer some flexibility to incorporate additional capabilities that may be required on a particular project.

Section 782-1.2.6: Consider deleting the word “then” since it is implied.

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

Section 782-1.2.8: Consider replacing the word “their” with “its” in the first paragraph.

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

Section 782-1.2.8: Consider deleting the word “all” in the term “and all other devices.”

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

Section 782-1.3: Consider highlighting the color consistency of ITS infrastructures (CCTV poles, VVD poles, etc.) by specifying the applicable color specifications governing infrastructure color.

ITS SECTION RESPONSE: Comment noted. Document changed. The ITS Section has not determined a color preference for equipment, other than to say that housings should be light in color to minimize solar heating. The default color is white; variations for special circumstances should be noted in the plans.

Section 782-1.4: Consider adding the term “from the initiation of the testing process” to the end of the last sentence. This section is also ideal for adding requirements for system integration and configuration that will be critical to the success of the project.

ITS SECTION RESPONSE: Comment accepted. Wording changed as recommended. As for system integration and testing, a separate ITS Section specification will contain those requirements and will be made a part of the contract documents.

Section 782-2.2: Consider adding “computers running various applications such as GOS, web interface, traffic modeling and simulation, etc.” as a bullet.

ITS SECTION RESPONSE: Comment noted. Text added in 782-2.2.1 in the fourth numbered item.

Section 782-2.2: Consider adding “analog and digital video decoders” as a bullet.

ITS SECTION RESPONSE: Comment noted. Document not changed. This is the implied meaning of the first sentence in 782-2.2.1.

Section 782-2.2.2: Consider adding the word “MPEG-4” right after MPEG-2 and define both terms in the TSPs.

ITS SECTION RESPONSE: Comment noted. Document not changed. Requirements that govern video transmission and compression formats are contained in Section 784, ITS Network Devices, under the subsections on encoders and decoders.

Section 782-2.2.2.2: The second paragraph has language for two different configuration requirements. If these are optional configurations, please so state. Otherwise, one needs to be deleted.

ITS SECTION RESPONSE: Comment noted. Document not changed. The paragraph actually refers to inputs and outputs of the same configuration. There is no duplication.

Section 782-2.2.2.2: The third paragraph states “multiple inputs can be routed to a single display simultaneously.” This needs to be clarified. Presumably, it would be one display but different and separate viewing windows.

ITS SECTION RESPONSE: Comment noted. Document changed to clarify text.

Section 782-2.2.2.2.3: Consider replacing the word “that” with “than” in the third sentence.

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

Section 782-2.2.2.2.4: Why is the TSP limiting the number of simultaneous video streams to 4 only?

ITS SECTION RESPONSE: No limit was intended. This text has been revised to clarify the number of compressed video streams the system should display.

Section 782-2.2.3: Consider adding the word “section” before “782-2.3.”

ITS SECTION RESPONSE: Comment noted. Document changed. The word “Subsection” was added.

Section 782-2.2.5: Consider defining the maximum number of workstations that need to be supported.

ITS SECTION RESPONSE: Comment noted. The number of TMC workstations is likely to vary from one project to the next. This is a requirement that is probably better listed in the project plans.

Section 782-2.2.5: Add the word “be” between “can” and “accomplished” in bullet number 4.

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

Section 782-2.2.6: Consider defining the maximum number of workstations that need to be supported in bullet number 2.

ITS SECTION RESPONSE: Comment noted. The number of TMC workstations is likely to vary from one project to the next. This is a requirement that is probably better listed in the project plans.

Section 782-2.3: Consider including additional headings to the table since it has 6 columns but only 3 headings.

ITS SECTION RESPONSE: Comment noted. Line weights of table borders changed to better denote display groupings. This layout was selected to illustrate the variations allowed under each display type in the main headings.

Training and technical support requirements should be included in the TSPs. Requirements for system integration and configurations should be added to the TSPs.

ITS SECTION RESPONSE: Separate ITS Section specifications will contain the requirements for training and TMC testing. They will be made a part of the contract documents.

Elizabeth McCrary

The comments below are submitted by the District Seven ITS section of Traffic Operations. Our ITS GC assisted with the review process. Thank you,

782-2.2.2.2 Digital Video

DVI connectors are not BNC types. They are a special connector.

DVI to BNC adapters are available but only support the analog portion of the signal, not the digital.

ITS SECTION RESPONSE: Comment noted. Document changed to require DVI connectors.

782-2.3 Performance Specifications

Why would you limit the aspect ratio on a direct view LCD panel to 4:3? Large LCD panels are all 16:9 - PC Monitors are mostly 4:3

ITS SECTION RESPONSE: The specification does not limit LCD selection to the 4:3 aspect ratio. Both types are listed in the chart and are suitable for use.

Mark Burcham

1) For 782-1.2.1 Camera section, recommend inclusion of output impedance of 75 ohms, in addition to 1 Vp-p.

ITS SECTION RESPONSE: Comment accepted and incorporated into the document.

2) For 782-1.2.1 Camera section, recommend inclusion of minimum optical zoom 20x to features and capabilities.

ITS SECTION RESPONSE: Comment noted. The reference to a 22x optical zoom is included in Subsection 782-1.2.2 on lenses.

3) For 782-1.2.1 Camera section, suggest inclusion of minimum / maximum number of characters (text) per line for programmable camera and preset titles. Also suggest inclusion of minimum number of desired lines for programmable camera and preset titles.

ITS SECTION RESPONSE: Comment accepted. Text changed to require a minimum of 18 characters per line.

4) For 782-1.2.8 Environmental Specifications section, recommend operating requirement of relative humidity 5 to 90%, non-condensing in addition to temperature range requirement.

ITS SECTION RESPONSE: Comment noted. NEMA requirements apply, which state the humidity level as not exceeding 95%, non-condensing. In addition to the temperature range, the device has to withstand rain and other roadside weather conditions.

- 5) For 782-1.3 Installation Requirements section, recommend revision of “Furnish and install the power supplies, local control equipment, surge (coaxial, data , and power) and lightning suppressors that are capable of meeting or exceeding the device protection requirements as contained in Section 785-1, and any other camera-related field electronic equipment within a pole ...”.

ITS SECTION RESPONSE: Comment noted. Reference added on installing surge suppression.

- 6) For 782-1.2.7 Mechanical Specifications section, suggest inclusion of “The camera housing shall be constructed to allow all camera and lens positions without restricting the camera views.

ITS SECTION RESPONSE: Comment noted. Document changed in Subsection 782-1.1 to require unobstructed views.

- 7) For 782-2.2.2 Video Display Control System section, recommend inclusion of 64-bit graphics video card to personal shelf components of personal PC hardware requirements.

ITS SECTION RESPONSE: Comment noted. Document not changed. The hardware necessary to meet the functional display requirements (e.g., minimum 32 windows each displaying video in 720x480 resolution) should be sufficient. Use of a particular component is a decision left to the system designer.

- 8) For 782-2.2.8 Cabling section, recommend inclusion that all cabling shall meet the Electronic Industries Alliance/Telecommunications Industries Association (EIA/TIA) 568B; Commercial Building Telecommunications Wiring standard.

ITS SECTION RESPONSE: Comment noted. Document text modified to require that cabling conform to applicable EIA and TIA standards.

- 9) For 782-2.5.2 Observation Period section, suggest additional language that the Engineer, at his discretion, may request a restart of the 90-day operational period if a major system flaw or failure occurs at no cost to the Department.

ITS SECTION RESPONSE: Comment noted. Document changed to allow option of restarting observation period.

Chung Tran, FHWA

782-1.2.1, 3 – “...clear, detailed and usable video images...” - How will this be enforce and tests?

ITS SECTION RESPONSE: The criteria, though somewhat subjective, should be adequate to allow the professional judgment of the Engineer, Project Manager or other

end user to determine if the picture quality is satisfactory. The document describes specific video defects, such as transfer smear, oversaturation, and others, as well as other measurable qualities (signal-to-noise, minimum resolution, etc.) that could be used to support the Engineer's determination.

782-1.2.2 – “CCTV camera shall have a minimum 22X motorized optical zoom lens.....”
We should look at re-writing ensure to shall statement to make it more streamline.

ITS SECTION RESPONSE: Comment noted. Document not changed. This sentence structure is dictated by the FDOT Specifications Office. It is common to all FDOT specifications, which are expressly directed at the Contractor. This way, responsibility for complying with the requirements is indicated by the phrasing.

782-1.2.5 - Should we note the latest version of NTCIP 1205?

ITS SECTION RESPONSE: No. Text was changed to reference Version 1.08, which is the benchmark utilized in producing the Department's SunGuide Software System.

782-1.4 – Paragraph 1 - Review and approval? Paragraph 2 - FDOT approved independent testing laboratory?

ITS SECTION RESPONSE: Comment noted. The word “review” was substituted for “consideration”. Laboratory text not changed. The ITS Section has no formal program at this time for evaluating and approving testing laboratories, so the text should not imply that we do this. Plans call for some acceptance testing to be performed at TERL once the facilities are in place there.

782-2.2.2 – Paragraph 2 - This section is further clarify at the end of the specification, I wonder if we need to look at the matrix at the end and bring some of that ahead?

ITS SECTION RESPONSE: Comment noted. Document not changed. This paragraph describes system-level functions to create the desired visual displays, while the chart in 782-2.3 is included to illustrate only the display equipment types and their features. The Spec Office recommended a chart in order to display this information in a concise manner. The preference is to keep the information presented as is.

782-2.2.4 – “...rear projection video...” - This is the first time we talked about rear projection video, all the specification was for CRT, Tube or other?

ITS SECTION RESPONSE: Comment noted. Rear projection is actually referred to in 782-2.2.3 in the context of the display cubes that comprise a video wall. This is the typical configuration for the TMCs the Districts are planning.

782-2.2.5 – “... two piece fresnel lenticular lens ...” - is this proprietary technology?

ITS SECTION RESPONSE: No. While the two-piece fresnel/lenticular design is not proprietary, the black bead screen reference may be construed as such. None of these design features are necessary to describe the functional characteristics of the display (brightness, contrast, uniformity, etc. – as required elsewhere in the document). The paragraph has been removed.

782-2.2.9 – “... 60 Hz. ~~Ferfor~~... “ – ‘for’ should not be capitalized.

ITS SECTION RESPONSE: “For” in this paragraph is actually starting a new sentence. Document edited to clarify requirement.

Jim LaBatt, Blackhawk Enterprises, Inc.

782-1.2.1 Camera

I don't believe bullet number 7, user selectable gamma, should be included in the specification.

Gamma settings are more typically used when working with digital photography, where Mac and PC computers use different values to display images. In the CCTV world, this function should not be required or needed, as there are better methods of brightening or darkening an image. I also do not believe that the two major dome camera module manufacturers (Hitachi and Sony) offer this feature as user programmable.

ITS SECTION RESPONSE: Comment accepted. Requirement for user-selectable gamma values has been removed from the document.

782-1.2.2 Lens

I would recommend leaving the specification at 22x, and not dictating the focal length range, as it may be slightly different between manufacturers. For example, Vicon, Cohu and Pelco all offer 23x camera with a focal range of 3.6 – 82.8mm. However, they also offer 22x camera with a focal range of 4-88 mm. And in 2006, everyone will be coming out with a 35x optical zoom that we do not yet know the actual focal range. I can foresee a junior engineer rejecting a submittal over 1mm in the spec.

ITS SECTION RESPONSE: Comment noted. Focal length measurements have been removed.

782-1.2.5 Communication

The specification indicates adherence to NTCIP 1205, but does not indicate NTCIP 1103, nor v1.08 (current) or “current version”. Is NTCIP really required as long as the camera interoperates within SunGuide? I think everyone offers NTCIP now, but if it is mentioned, the spec should say something like “adherence to the latest published version of the NTCIP” or to the latest version adopted by the SunGuide software.

ITS SECTION RESPONSE: Comment noted. Text was changed to reference Version 1.08, which is the benchmark utilized in producing the Department's SunGuide Software System.

782-1.3 Installation Requirements

I think that the State should consider developing a standard specification for a composite video cable (like SCDOT did), or at least require a composite cable assembly per manufacturer's recommendation. By not specifying the cable, there is too much leeway for the Contractor to use substandard materials. The state may also want to consider, if it has not already, defining a standard field local control panel, as well as a standard CCTV cabinet. There should also be some provision in the specification about mounts or mountings. Most of the new projects utilize camera lowering devices. Cameras need to be compatible to mount to both CLS and MG2.

ITS SECTION RESPONSE: Comment noted. Document not changed. Separate specifications will provide requirements for field cabinets, equipment shelters, and lowering devices with poles. As for cables, 782-2.2.1 states that the Engineer is to review and approve all hardware and materials to ensure that they are satisfactory. This subsection requires that all components are compatible with each other, which would cover mountings, cables and other ancillary items. If additional criteria are warranted, they can be noted in the project plans.

782-3 Guaranty Provisions

There is one theme within this section that is bothersome as a manufacturer, but I can't say that I have a solution. As the end-user, I understand the reasoning behind wanting a warranty for 'n' years from date of final acceptance. However, as a manufacturer, we therein assume a liability for a non-capable, non-performing contractor. In a perfect world, a good Contractor will finish a 1 year contract in 1 year. Therefore, the manufacturer can cost a 3 year warranty for a DVE and meet the specification requirement for 2 year warranty from date of final acceptance. However, track history on Florida projects in recent years has shown that many Contractors are not finishing their projects on time. There are delays associated with hurricanes, contract disputes, and the inability of Contractors to do the work properly. These delays can last months to years. It seems unfair for manufacturers to burden the extra warranty time when they are not at fault for the delays. Maybe the warranty can start at the original scheduled date of completion.

ITS SECTION RESPONSE: Comment noted. These and other issues are being addressed in a rewrite of this section. The document is being changed so that the warranty section conforms to the Department's basic contract requirements concerning latent defects in installations and the need for bonding. As of this writing, it is the Department's preference and requirement to have the warranty start at final acceptance of the installation.