

## SECTION 16733

### COMMUNICATIONS - KIOSK SYSTEMS

#### PART 1 GENERAL

##### 1.01 SECTION DESCRIPTION AND BASIC REQUIREMENTS

- A. The purpose of the Kiosk System is to provide the kiosk with the equipment needed to monitor and control passenger station Communications Systems, Fire and Intrusion Alarm Systems, to provide data signals to fare collection equipment, elevators and escalators, and to provide an effective communications interface with the public (customers).
- B. At least one kiosk is located in each passenger station of the Washington Metropolitan Area Transit Authority (WMATA) Rail Rapid Transit System. It is the focal point of activity at each passenger station. At large passenger stations, each operational level may contain more than one kiosk. Where more than one kiosk is located on a single level, one kiosk is designated as the "Major Kiosk." All other kiosks are designated "Minor Kiosks." In those stations where a single kiosk exists, it is considered to be the "Major Kiosk."
- C. Facilities are to be provided in each kiosk for the station manager to monitor and control passenger station systems. The contractor shall provide a complete "Kiosk Facility" which shall include kiosk cabinets, system interface panels, cables, cable termination facilities, loudspeakers, wiring and all hardware needed to complete the installation of Station Monitor/Control Systems in the kiosk. The requirements for the individual monitor/control panels and systems, to be installed in the kiosk under this contract, are included in the respective System Specification Sections.
- D. The contractor shall provide Cabinet Bays #1 through #6 in the Kiosk(s) included in this contract, as indicated on the contract drawings. Kiosk Cabinet Bay #7 will be furnished and installed by other trades.
- E. The contractor shall provide a Cable Termination Rack in Cabinet Bay # 3 of the kiosk(s) covered by this contract. The kiosk Cable Termination Rack shall consist of seven Terminal Strips and a Line Terminal Block. Terminal Strips shall be equally spaced on the Termination Rack. Each Terminal Strip within the kiosk Cable Termination Rack shall consist of sixty (60) individual terminals. The kiosk Cable Termination Rack shall be provided in the kiosk(s) to terminate all cables and wires that are to be installed into the kiosk(s) under this contract, with the following exceptions:
  - 1. Coaxial video cables.
  - 2. Automatic Public Address Announcement System cables.
  - 3. Passenger Emergency Reporting System cables.
  - 4. Kiosk Multiline Telephone Cable Connections.
- F. The coaxial cables from the station Communications Equipment Room are terminated on the Coaxial Cable Termination Panel in Bay # 3. The coaxial cables from the kiosk video equipment shall also be terminated on the Coaxial Cable Termination Panel. The Automatic Public Address Announcement System cables and the Passenger Emergency Reporting System cables are terminated on the Emergency Communications Kiosk Terminal Panel.
- G. The Contractor shall provide an Emergency Communications Kiosk Terminal Panel in Bay # 3 of the cabinetry in the kiosk(s) included in this contract. The Emergency

Communications Kiosk Terminal Panel shall be the interface point for cables from the station Communications Equipment Room to the kiosk control panels, for the Automatic Public Address Announcement System and the Passenger Emergency Reporting System. The Emergency Communications Kiosk Terminal Panel shall consist of three terminal blocks mounted on a 16-gauge steel plate. Two blocks shall have a minimum of 23 miniature terminals, and the other block shall have a minimum of 20 miniature terminals. Details on the layout, mounting and lettering of the Emergency Communications Kiosk Terminal Panel are included on the contract drawings.

- H. The contractor shall provide a 24-Vdc Power Supply in the Public Address System Equipment Rack located in the station(s) Communications Equipment Room, and shall interconnect it to the kiosk Cable Termination Rack. The 24-Vdc Power Supply will be used to power the Escalator Display Panel in the kiosk(s).
- I. The contractor shall engineer, draw, print and deliver to the Authority, Kiosk Data Files for the passenger station(s) under this Contract. The Kiosk Data Files shall be designed to be a convenient source of information on the layout of the following systems:
  - 1. Passenger Station Telephones.
  - 2. Right-of-Way and Ancillary Building Telephones.
  - 3. Passenger Station Fire Zones.
  - 4. Ancillary Building Fire Zones.
  - 5. Passenger Station Intrusion Zones.
  - 6. Ancillary Building Intrusion Zones.
  - 7. Escalators.
  - 8. Closed Circuit Television System.
  - 9. Passenger Emergency Reporting System.
- J. Contractor shall also provide laminated Fire and Intrusion Zone tables for the passenger station(s).
- K. The Escalator Display Panel provides four status indicators and one identification indicator for each of up to 16 escalators. The following indicators are provided for each escalator:
  - 1. Direction of Travel - "UP" or "DOWN."
  - 2. Automatic Operation - "AUTO OPER."
  - 3. Out of Service - "OUT SERV."
  - 4. Escalator Identification - "ESC XX" where "XX" is the number of the escalator.
- L. The Escalator Display Panel also includes a momentary, non-illuminating, pushbutton switch to permit a lamp test of all indicators on the panel.
- M. Kiosk Monitor/Controls provide the station manager with a means to effectively manage passenger station activities. The operation of the monitor/control panels and systems, to be installed in the kiosk under this contract (except the Escalator Control Panel described in this Section), is described in the individual system specifications.

## **1.02 SECTION INCLUDES**

- A. Kiosk Cabinet Bays #1 through #6C in the Kiosk(s).
- B. 24-Vdc Power Supply.
- C. Escalator Display Panel.
- D. Kiosk Data File.

- E. Kiosk Cable Termination Rack.

### **1.03 UNIT PRICES**

- A. Unit Prices include all required conduits and fittings, junction boxes, feeder wires, branch circuit wiring, and cabling to the communications systems and facilities and incidental items, not specifically mentioned, but required for complete and proper system operation.

### **1.04 RELATED SECTIONS**

- A. Section 14200 - Hydraulic Elevators.
- B. Section 14240 - Traction Elevators.
- C. Section 14300 - Heavy-Duty Escalator.
- D. Section 16705 - Communications Standard Specifications - Equipment & Material.
- E. Section 16706 - Communications System Submittals & Services..
- F. Section 16707 - Communications Systems Quality Assurance & Testing
- G. Section 16710 - Communications Grounding.
- H. Section 16715 - Communications Electrical Power Distribution.
- I. Section 16721 - Communications - Telephone System
- J. Section 16727 - Communications - Passenger Emergency Reporting System.
- K. Section 16771 - Communications - Carrier Transmission System
- L. Section 16776 - Communications - Fiber Optic System..
- M. Section 16731 - Communications - Fire Alarm System..
- N. Section 16820 - Communications - Public Address System..
- O. Section 16821 - Communications - Automatic Public Address Announcement System.
- P. Section 16851 - Communications - Passenger Station Closed-Circuit Television System.

### **1.05 REFERENCES**

- A. National Electric Code (NEC).

### **1.06 SYSTEM DESCRIPTION**

- A. Description: The Kiosk System provides the kiosk with the equipment needed to monitor and control passenger station Communications Systems, Fire and Intrusion Alarm Systems, to provide data signals to fare collection equipment, elevators and escalators, and to provide an effective communications interface with the public (customers).

- B. Capacity:
1. The Contractor shall furnish and install a 24-Vdc Power Supply for the kiosk that is sufficient to power all the 24-Vac equipment located in the kiosk, plus 50% spare capacity.
  2. The Contractor shall furnish and install kiosk Cabinet Bays #1 through #6C in the kiosk(s).
  3. The Contractor shall install the Escalator Display Panel(s) furnished by other trades.
  4. The Contractor shall author, publish and furnish one set of Kiosk Data Files for each kiosk in each passenger station, and 12 additional sets of Kiosk Data Files to the Authority for each passenger station.
  5. The Contractor shall furnish and install a Kiosk Cable Termination Rack in each kiosk.
  6. The Contractor shall furnish and install an Emergency Communications Kiosk Terminal Panel in each kiosk.
  7. The contractor shall install an Elevator Control Panel (provided under Section 14200 - Hydraulic Elevators or Section 14240 - Traction Elevators) in the kiosk.
- C. The Kiosk Cable Termination Rack consists of seven Terminal Strips and a Line Terminal Block in Cabinet Bay 6B. Each Terminal Strip within the Kiosk Cable Termination Rack consists of sixty (60) individual terminals. The Kiosk Cable Termination Rack terminates all cables and wires that are to be installed into the kiosk(s) in this contract, with the following exceptions:
1. Coaxial video cables.
  2. Automatic Public Address Announcement System cables.
  3. Passenger Emergency Reporting System cables.
  4. Kiosk Multi-line Telephone Cable Connections.
- D. The coaxial cables from the station Communications Equipment Room are terminated on the Coaxial Cable Termination Panel in Bay 6B. The coaxial cables from the kiosk video equipment are also terminated on the Coaxial Cable Termination Panel. The Automatic Public Address Announcement System cables and the Passenger Emergency Reporting System cables are terminated on the Emergency Communications Kiosk Terminal Panel.
- E. The Emergency Communications Kiosk Terminal Panel in Bay 6B is the interface point for cables from the station Communications Equipment Room to the Kiosk control panels, for the Automatic Public Address Announcement System and the Passenger Emergency Reporting System.
- F. A 24-Vdc Power Supply in the Public Address System Equipment Rack located in the station(s) Communications Equipment Room, and interconnects to the kiosk Cable Termination Rack to provide power to the Escalator Display Panel in the kiosk(s).
- G. The Kiosk Data Files provide a convenient source of information on the layout of the following systems:
1. Passenger Station Telephones.
  2. Right-of-Way and Ancillary Building Telephones.
  3. Passenger Station Fire Zones.
  4. Ancillary Building Fire Zones.
  5. Passenger Station Intrusion Zones.
  6. Ancillary Building Intrusion Zones.
  7. Escalators.
  8. Closed Circuit Television System.
  9. Passenger Emergency Reporting System.

- H. The Escalator Display Panel provides four status indicators and one identification indicator for each of up to 16 escalators. The following indicators are provided for each escalator:
1. Direction of Travel - "UP" or "DOWN."
  2. Automatic Operation - "AUTO OPER."
  3. Out of Service -"OUT SERV."
  4. Escalator Identification - "ESC XX" where "XX" is the number of the escalator.

#### **1.07 SUBMITTALS**

- A. Submit under provisions of Section 16706.
- B. Shop Drawings: Indicate electrical characteristics and connection requirements, including system wiring diagram and mechanical layout.
- C. Product Data: Provide data showing electrical characteristics and connection requirements for each component.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.
- E. Submitted to the Engineer for approval prior to reproduction, lamination and assembly a draft copy of each Kiosk Data File for the passenger station(s).
- F. Furnish a complete set of Mylar reproducible drawings for the Kiosk Data File of the passenger station(s), and electronic copies (in AutoCAD, latest release format) on diskette and compact disk.

#### **1.08 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Supplier: Authorized distributor of specified manufacturer with minimum three years documented experience.
- C. Installer: Service facilities within 50 miles of Project.

#### **1.09 MAINTENANCE SERVICE**

- A. Furnish service and maintenance of Kiosk Systems until Final Completion.

### **PART 2 - PRODUCTS**

#### **2.01 TERMINALS**

- A. Manufacturers:
1. Weidmuller, Model No. SAKC4 Complete with Channel Mounting System (or approved equal).
- B. Ratings:
1. Terminal Type: Modular Micro Terminal with Screw Clamp Connection.
  2. Wire size accommodated: #22 thru #12-AWG.
  3. Rated Current: 27-Amps.

4. Rated Voltage: 300-Vdc.
5. Center-to-Center Spacing: 6-mm.

## **2.02 LINE TERMINAL BLOCK**

- A. Manufacturers:
  1. Siecor, Model No. A0293268 (or approved equal).
- B. Ratings:
  1. Terminal Type: Wire Wrapping Terminals.
  2. Terminal Configuration: 4 rows x 26 clips.
  3. Mounting Base: Adjustable from 7-inches to 9-inches.

## **2.03 24-VDC POWER SUPPLY**

- A. Manufacturers:
  1. Acopian, Model No. 24PH30 (or approved equal).
- B. Ratings:
  1. Input Voltage: 105-125 Vac, 60 Hz, Single Phase.
  2. Output Voltage: 24-Vdc  $\pm$  .5-Vdc (adjustable).
  3. Output Current (minimum): 30-Amps @ 40°C. 23-Amps @ 55°C.
  4. Ambient Operating Temperature: -20 to +55° C.
  5. Regulation (line/load):  $\pm$  .05%.
  6. Size: Not greater than 3 vertical rack units (19-inch rack).
  7. Standard RETMA 19-inch cabinet rack mount.

## **2.04 KIOSK CABINET BAY ASSEMBLY**

- A. Manufacturers:
  1. Custom made.
- B. Ratings:
  1. Frame Material: 16-Gauge Galvanized Steel.
  2. Exposed Metal Finish: Metro Bronze Color 20040 (Federal Standard 595B).
  3. Desk Tops: 1-inch Marine Plywood (MARINE AA EXT-APA).
  4. Hardware: Cadmium Plated.
  5. Desk-Top Laminate: Formica Grade 10 (or approved equal).
  6. Desk-Top Laminate Color: Neutral White #918.

## **2.05 KIOSK DATA FILE**

- A. Manufacturers:
  1. Custom made.
- B. Description: Each Kiosk Data File shall consist of eight or more 11" x 17" drawings.
- C. Prepared Kiosk Data File drawings to document each of the following subjects:
  1. Telephones (passenger station) - A cross-reference of telephone numbers and telephone locations within a passenger station.
  2. Telephones (Right-of-Way and Ancillary Facilities) - A cross-reference, by telephone numbers and locations, of the telephones along the right-of-way and in ancillary facilities associated with a passenger station.

3. Fire Zones (Passenger Station) - A cross-reference of the designated fire zones, room numbers and room descriptions for all areas within a passenger station, including ancillary facilities within the passenger station limits.
  4. Fire Zones (Ancillary Facilities) - A cross-reference of the designated fire zones in remote ancillary facilities associated with a passenger station.
  5. Intrusion Zones (passenger station) - A cross-reference of the designated intrusion zones, room numbers and room descriptions for all areas of a passenger station, including ancillary facilities within the passenger station limits.
  6. Intrusion Zones (Ancillary Facilities) - A cross-reference of the designated intrusion zones in remote ancillary facilities associated with a passenger station.
  7. Escalators - A cross-reference of assigned escalator numbers and escalator locations within a passenger station.
  8. CCTV - A cross-reference of television monitor assignments and arrangements, and television camera designations, locations and areas of coverage for all television cameras and television monitors within a passenger station.
  9. Passenger Emergency Reporting System - A layout of platform(s) showing locations and designations of call stations.
- D. Ratings:
1. Seal Kiosk Data File drawings in a protective plastic laminate.
  2. Each Kiosk Data File set shall be in loose-leaf booklet form.
  3. Covers: 11" x 17", minimum of 60-pound punched paper with holes reinforced with plastic, cloth or metal, and sealed in a protective plastic laminate.

## **2.06 EMERGENCY COMMUNICATIONS KIOSK TERMINAL PANEL**

- A. Manufacturers:
1. Custom made.
- B. Description: The Emergency Communications Kiosk Terminal Panel consist of three terminal blocks mounted on a 16-gauge steel plate and have the following characteristics:
1. Two of the terminal blocks shall each have a minimum of 23 miniature terminals.
  2. The other terminal block shall have a minimum of 20 miniature terminals.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. Kiosk cabinet bay assembly installation
1. Install the assembled kiosk cabinetry in the kiosk of the passenger station(s). Cabinet assembly installation shall be as follows: Bays #1, #2A, 2B, 2C and #3 as a single unit; Bays #4, #5, and #6A, 6B, and 6C as a single unit. Secured to the floor of the kiosk. Kiosk cabinets may be secured to the kiosk sides with the approval of the Engineer; however, the securing hardware shall not carry any vertical load. Hardware installed in the kiosk sides shall only be used to prevent horizontal movement.
- B. Kiosk cable termination rack installation
1. Install a Kiosk Cable Termination Rack in Kiosk Cabinet Bay 6B of the kiosk. Install structure elements in the Kiosk Cabinet Bay 6B to accommodate the Terminal Strips and the Line Terminal Block of the Kiosk Cable Termination Rack.
- C. Emergency communications kiosk terminal panel

1. Install an Emergency Communications Kiosk Terminal Panel in Kiosk Cabinet Bay 6B of the kiosk, as indicated on the contract drawings. Installation shall not interfere with the Cable Termination Rack Terminal Strips. Secure Cables to the Emergency Communications Kiosk Terminal Panel to the panel to prevent interference with the Kiosk Cable Termination Rack wiring and cabling.
- D. Escalator display panel
1. Install an Escalator Display Panel in Cabinet Bay 3 of the Kiosk. install the required wiring harness(es) between the panel and the Kiosk Cable Termination Rack in Bay 6B, and make all necessary connections and cross-connections. Install one 9-conductor, 18-AWG, shielded cable for each escalator associated with the passenger station(s) between the Kiosk Cable Termination Rack in Bay 6B of the Kiosk and the Escalator Terminal Box in the escalator wellways. Terminate the cables in the kiosk and at the escalators and make all necessary connections and cross-connections.
- E. Standard time cable
1. Install a six-pair individually shielded "Standard Time" cable between the TC/COMM Interface Cabinet in the station Communications Equipment Room and the kiosk. Terminate the pairs at the TC/COMM Interface Cabinet and at the kiosk Cable Termination Rack in Bay 6B of the kiosk cabinets and make all necessary connections and cross-connections.
- F. Kiosk 24-vdc power facility
1. Install the 24-Vdc Power Supply in the Public Address System Equipment Rack located in the station Communications Equipment Room.
  2. Install the required cabling and connectors and make the necessary connections and cross-connections between the 24-Vdc Power Supply in the Communications Equipment Room and the Kiosk Cable Termination Rack in the kiosk.
- G. Elevator control panel
1. The Elevator Control Panel will be installed in Bay 3 of the kiosk under Section 14200 or Section 14240..

### **3.02 MANUFACTURER'S FIELD SERVICES**

- A. Prepare and start systems under provisions of Section 16707.
- B. Supervise final wiring connections and system adjustments.

### **3.03 ADJUSTING**

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

### **3.04 DEMONSTRATION**

- A. Demonstrate operation and maintenance of Products to WMATA personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate Project equipment by a qualified person who is knowledgeable about the Project.



- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with WMATA personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at equipment location.
- E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction
- F. Demonstrate system operation.
- G. Conduct walking tour of Project and briefly describe function, operation, and maintenance of each component.

**END OF SECTION**