1. **TITLE:** ***VoIP TELEPHONE SYSTEM***

2. **GENERAL DESCRIPTION & FUNCTIONALAITY***: Describes system and its functionality along with a list of attributes and subsystems.*
   a. *The Telephone System is a Voice over Internet Protocol (VoIP) Telephone System. This system is part of the WMATA telecommunications network. Its purpose is to provide telephone service to WMATA personnel in selected locations within passenger stations, and all other rail system facilities. The VoIP Telephone System is not intended to provide telephone service to rail system passengers. Telephones (located in Service Rooms, Ancillary Buildings, etc.) that might be used to dial 9-1-1 emergency services (police, fire, medical, etc.), will have the capability of reaching the Public Service Answering Point (PSAP) for the jurisdiction in which it is located and be capable of providing Caller-ID information regarding the location that the call is being made from. Internal telephones that do not access the (PSAP) system will be programmed to dial the Rail Operation Control Center (ROCC) when dialing 911.*

3. **SYSTEM COMPONENTS:**
   a. **Telephone instruments:**
      i. *Multi line VoIP telephone sets*
      ii. *Single line Analog telephone sets*
      iii. *Single line, Analog, harsh environment, telephone sets.*
      iv. *Single line, Analog, single push button, harsh environment, telephone sets.*

   b. **Analog gateway:**
      i. *Rack mounted analog gateway that provides Analog telephone service locally as well as survivability features in the event of Local Area Network (LAN) or power outages.*

   c. **Emergency Trip Panel (ETR):**
      i. *Wall mounted ETR panel provides switching capability to outside telephone lines for emergency telephones from the Avaya gateway to enable power outage survivability.*

   d. **Main Distribution Frame (MDF):**
      i. *An (MDF) is a signal distribution frame for connecting equipment to cables and subscriber carrier equipment cables to Intermediate Distribution Frames (IDF)*

   e. **System cabling:**
      i. *System cabling consists of both Inside Plant (ISP) and Outside Plant (OSP) copper cabling that supports telephone signals from core system equipment and outside carriers.*

4. **INSTALLATION:** *A brief description of each installation procedure to complete the system.*
   a. *The installation of telephone instruments in Service Rooms and Ancillary Buildings within the Passenger Station limits each connected to the nearest LAN location via a dedicated 4-pair category 6 inside plant cable.*
   b. *The installation of A multi-line telephone instrument in each Kiosk connected to the Kiosk LAN switch.*
   c. *The installation of a 25 pair cable between the Rail Station Communication Equipment Room (CER) to each station Kiosk.*
   d. *The installation of (1) 25 pair cable from the Station MDF to each remote LAN location to include any additional Telecommunications Rooms (TR) & Telecommunications Enclosures (TE) locations.*
   e. *The installation of a ground isolated 25-pair cable between the cable terminals in the service provider Entrance Facility (EF) and the Main Distribution Frame (MDF) in the Communications Equipment Room (CER).*
   f. *The installation of Emergency telephones that will be placed at each Kiosk, in the station Communication Equipment Room (CER), in any additional Telecommunications Room (TR) and in the Train Control room. Each emergency telephone will consist of one single line analog telephone. This telephone will be connected back to the station MDF where it will be terminated on the, ETR panel, this panel will bridge leased telephone lines from a local service provider between the emergency telephones and the Avaya Gateway for telephone system survivability from both LAN and power outages.*
   g. *All system devices utilizing both copper and fiber cable connectivity, to each other or outside circuits, must be routed through the appropriate patch panels, terminations blocks and cross connect and patching media. By no means can equipment be patched directly into any network equipment without first landing on one of the above mentioned termination products.*
   h. *All cabling installed to support this system must be labeled according to the WMATA IT/NCS latest standards and practices.*

1. **TITLE:** ***Garage Emergency Telephone System (GETS)***

   1. **GENERAL DESCRIPTION & FUNCTIONALAITY***: Describes system and its functionality along with a list of attributes and subsystems.*
      a. *The Garage Emergency Telephone System (GETS) provides WMATA patrons with the capability of reporting emergency situations from the passenger station parking garages to WMATA Transit Police and Security (TPAS).*
      b. *The GETS Telephones shall provide man/machine interface points between WMATA patrons and TPAS. The GETS Telephone shall provide controls, indications, input/output devices, and instructions (both English and braille) that are necessary for the patrons to operate the GETS.*
      c. *Depressing the momentary contact pushbutton switch on the Emergency Telephone shall cause the telephone to go off hook, seize a phone line, turn on the red 'calling' light, dial the first programmed number, and waits to see if it has made a connection. If not, it*

*goes on to the second number, and does the same thing. If all programmed numbers fail, the phone repeats the whole process until it has tried all programmed numbers three times. In the default* ***voice answer mode****, it turns on the green 'received' light which then starts to blink, and plays the recorded message after TPAS answers the call and speaks. Two-way conversation can immediately begin.*

d. *Incoming calls to the Emergency Telephone may accomplish any one of three purposes. You may call to talk to someone at that end ("converse 'ring thru' mode") with the strobe light active, to listen silently to what's going on at that location ("silent monitor mode") with the strobe light off, or to program the Emergency Telephone ("programming mode").*
e. *When the TPAS telephone is answered, the Emergency Telephone will send a pre-recorded audio announcement stating the location of the Emergency Telephone within the respective Garage Facility.*
f. *At each GETS Telephone location there is a A703 Strobe/Blue Light. The blue light is for visual identification of the Emergency Telephone location within the garage structure. It is quite visible both day and night. The 800,000 peak candlepower strobe light, when not flashing, has an orange glow. When the Emergency Telephone is activated it flashes at a 1 flash/second rate. These lights are powered from a garage emergency Uninterruptible Power System (UPS) lighting power circuit.*

2. **SYSTEM COMPONENTS:**
   a. *Single line, Analog, single push button, Harsh environment, telephone set.*
   b. *Strobe/Blue lights located above all emergency telephones.*
   c. *Power distribution Modules (located in the parking garage communication equipment room.)*

3. **INSTALLATION:** *A brief description of each installation procedure to complete the system.*
   a. *GETS telephones shall be installed throughout the garage facility, the telephones shall be ADA compliant, remote monitored by the existing WMATA (GETS) server.*
   b. *Each GETS telephone shall have a blue indicator light mounted above the telephone.*
   c. *GETS telephones shall be cabled back to the garage communications equipment room via outside plant category 6 cabling.*
   d. *Power distribution Modules (PDM) shall be installed within the garage communications equipment room.*
   e. *Install an OSP rated 25 pair cable between the Garage Communications Equipment Room and the Rail Station Communications Equipment Room (CER) Main Distribution Frame (MDF).*
   f. *All GETS telephones will be cabled back to the nearest Power Distribution Module in the garage communications room.*
   g. *The Voice Management System (VMS) shall test, at a minimum, the integrity of the GETS telephone line, the telephone circuitry and the telephone microphone and speaker for proper operation.*
   h. *All system devices utilizing both copper and fiber cable connectivity, to each other or outside circuits, must be routed through the appropriate patch panels, terminations blocks, cross connect and patching media. By no means can equipment be patched*

*directly into any network equipment without first landing on one of the above mentioned termination products.*

i. *All cabling installed to support this system must be labeled according to the WMATA IT/NCS standards and practices.*

## 2. TITLE: *Area Of Rescue Assistance (AORA)*

1. **GENERAL DESCRIPTION & FUNCTIONALAITY***: Describes system and its functionality along with a list of attributes and subsystems.*
   a. *The Area of Rescue Assistance telephone system is a communications system provided for the public in designated areas of a rail station. This system is to be used in the event of an emergency where an evacuation is announced/required. Those who cannot use the stairwells to evacuate are instructed to go to the AORA locations and await WMATA first responders. This system is designed to be simple to use with only one button to push to obtain communications with WMATA personnel.*
   b. *When the button is depressed the system dials the Kiosk, after three rings the system then dials the Rail Operations Control Center (ROCC) line console. After three rings, it will dial the (ROCC) assistant superintendent desk phone. After three rings, if that final call is not answered, then the cycle repeats.*

2. **SYSTEM COMPONENTS:**
   a. Emergency single push button programmable telephone.

3. **INSTALLATION:** *A brief description of each installation procedure to complete the system.*
   a. *All AORA telephones shall be installed in designated AORA locations, the telephones shall be American with Disabilities Act (ADA) compliant.*
   b. *All AORA telephones will be cabled back to the Rail Station Communications Equipment Room's MDF via ISP category 6 cabling, where it will be connected to the ETR panel.*
   c. *All system devices utilizing both copper and fiber cable connectivity, to each other or outside circuits, must be routed through the appropriate patch panels, terminations blocks and cross connect and patching media. By no means can equipment be patched directly into any network equipment without first landing on one of the above mentioned termination products.*
   d. *All cabling installed to support this system must be labeled according to the WMATA IT/NCS standards and practices.*

## 3. TITLE: *Emergency Trip Station telephone system (ETS)*

4. **GENERAL DESCRIPTION & FUNCTIONALAITY***: Describes system and its functionality along with a list of attributes and subsystems.*
   a. *The Emergency Trip Station telephone system is a communications system provided for WMATA personnel and the public in designated areas at the end of Rail Station*

*platforms as well as along the Road Way (ROW). This system is used in the event of an emergency or for repair and maintenance work along the ROW.*

b. *A "System Phone Numbers" placard will have the appropriate numbers to call to reach the OCC, Customer Operations, Maintenance operations Center, Transit Police and the safety Office.*

5. **SYSTEM COMPONENTS:**
   a. Single-line, Analog, Harsh environment, Flush panel Telephone.

6. **INSTALLATION:** *A brief description of each installation procedure to complete the system.*
   a. *ETS Emergency telephones shall be installed within the ETS NEMA 4 enclosure.*
   b. *ETS Emergency telephones shall be cabled back to the rail station communications equipment room (CER) via ISP category 6 cabling for all rail station platform locations and OSP cabling for all locations on the Road Way.*
   c. *At no point are party-line or line sharing configurations allowed, each ETS telephone will have its own unique cable circuit and telephone number.*
   d. *All system devices utilizing both copper and fiber cable connectivity, to each other or outside circuits, must be routed through the appropriate patch panels, terminations blocks and cross connect and patching media. By no means can equipment be patched directly into any network equipment without first landing on one of the above mentioned termination products.*
   e. *All cabling installed to support this system must be labeled according to the WMATA IT/NCS standards and practices.*

| **TABLE 27.1 PASSENGER STATION TELEPHONE INSTRUMENTSWITHIN PASSENGER STATION LIMITS** | |
|---|---|
| INSTRUMENT LOCATION | INSTRUMENT TYPE |
| Kiosk | Multi-line Desk VoIP + Single line Emergency telephone |

| | |
|---|---|
| Mechanical Rooms | Multi-line Wall VoIP |
| Communications Equipment Rooms (CER) | Multi-line Wall VoIP + Single line Emergency wall telephone |
| Train Control Rooms | Multi-line Wall VoIP + Single line Emergency wall telephone |
| Dispatcher Rooms | Multi-line Wall VoIP |
| Telecommunication Room (TR) | Multi-line Wall VoIP + Single line Emergency wall telephone |

| **TABLE 27.1 PASSENGER STATION TELEPHONE INSTRUMENTSWITHIN PASSENGER STATION LIMITS** | |
|---|---|
| INSTRUMENT LOCATION | INSTRUMENT TYPE |
| Operations Rooms | Multi-line Wall VoIP |
| Maintenance Rooms | Multi-line Wall VoIP |
| Cleaners Room/Water Service Rooms | Multi-line Wall VoIP |
| Trainperson's Rooms | Multi-line Wall VoIP |
| Terminal Supervisor's Rooms | Multi-line Wall VoIP |
| AC Switchboard Rooms | Multi-line Wall VoIP |
| Electrical Cabinet Rooms | Multi-line Wall VoIP |
| Chiller Room | Multi-line Wall VoIP |
| Police Service Rooms | Multi-line Desk VoIP |

| | |
|---|---|
| Escalator Pit(s) | * Wiring/termination only |
| Elevator Machine Rooms | Multi-line Wall VoIP |
| Stairs and Halls | Multi-line Wall VoIP |
| Area of Rescue Assistance Rooms | Emergency single push button Viking (E-1600A-EWP) Telephone |

Notes: 1. Wiring/termination is indicated for areas where inside plant cable and a modular telephone jack shall be furnished and installed by the Contractor for future telephone connection

2. COMM Room and ATC Room telephones in a station must be on different telephone numbers.

**TABLE 27.2 REMOTE ANCILLARY STRUCTURESTELEPHONE INSTRUMENT REQUIREMENTS**

| STRUCTURE | STATIONING | TELEPHONE INSTRUMENTS | PASSENGER STATION ASSIGNMENT |
|---|---|---|---|
| Emergency Access Shaft & Yard train wash areas. | | Single-line, Analog, Wall, Harsh environment. | |
| Fan Shaft Vent | | Single-line, Analog, Wall, Harsh environment. | |
| Access Shaft | | Single-line, Analog, Wall, Harsh environment. | |
| Traction Power Substation | | Multi-line Desk VoIP | |
| Emergency Trip Station Telephone | | Single-line, Analog, Harsh environment, Flush panel | |

**TABLE 27.2 REMOTE ANCILLARY STRUCTURESTELEPHONE INSTRUMENT REQUIREMENTS**

| STRUCTURE | STATIONING | TELEPHONE INSTRUMENTS | PASSENGER STATION ASSIGNMENT |
|---|---|---|---|
| Drainage Pumping Station | | Single-line, Analog Wall | |
| Traction Power Tie Breaker Station | | Multi-line Desk VoIP | |
| Parking Lot & Garage Booths | | Multi-line Desk VoIP | All |
| Parking Garage Service Rooms | | Multi-line Desk VoIP | |

**WMATA PROVIDED SERVICES:**

a. All call manager programming and telephone station numbering will be done by the WMATA IT/NCS department. The awarded contractor must coordinate with WMATA for these and all other telephone system programming services.
b. All system specific products will be listed in the ***WMATA IT/NCS Equipment Standards*** document. A copy of this can be obtained from the assigned WMATA IT/NCS Project Manager (PM).