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FACILITY TELECOMMUNICATIONS MANAGEMENT FOR THE GOVERNMENT EMERGENCY TELECOMMUNICATIONS SERVICE

INTRODUCTION

This document provides telecommunications management information for organizations that use the Government Emergency Telecommunications Service (GETS). It identifies information on obtaining basic facility access to GETS, and optional steps that may be taken to improve GETS access. The GETS capability is based in the public wireline telephone networks, also known as the Public Switched Telephone Network (PSTN).

USER ORGANIZATION RESPONSIBILITIES

GETS user organizations are required to work with the facility telephone access provider (for example, the local exchange carrier (LEC) for circuit-switched connections, or the Voice over Internet Protocol (VoIP) service provider for IP connections) to determine how priority treatment can be provided for GETS calls. User organizations must determine the priority treatment for each facility or location where GETS users perform national security and emergency preparedness (NS/EP) functions.

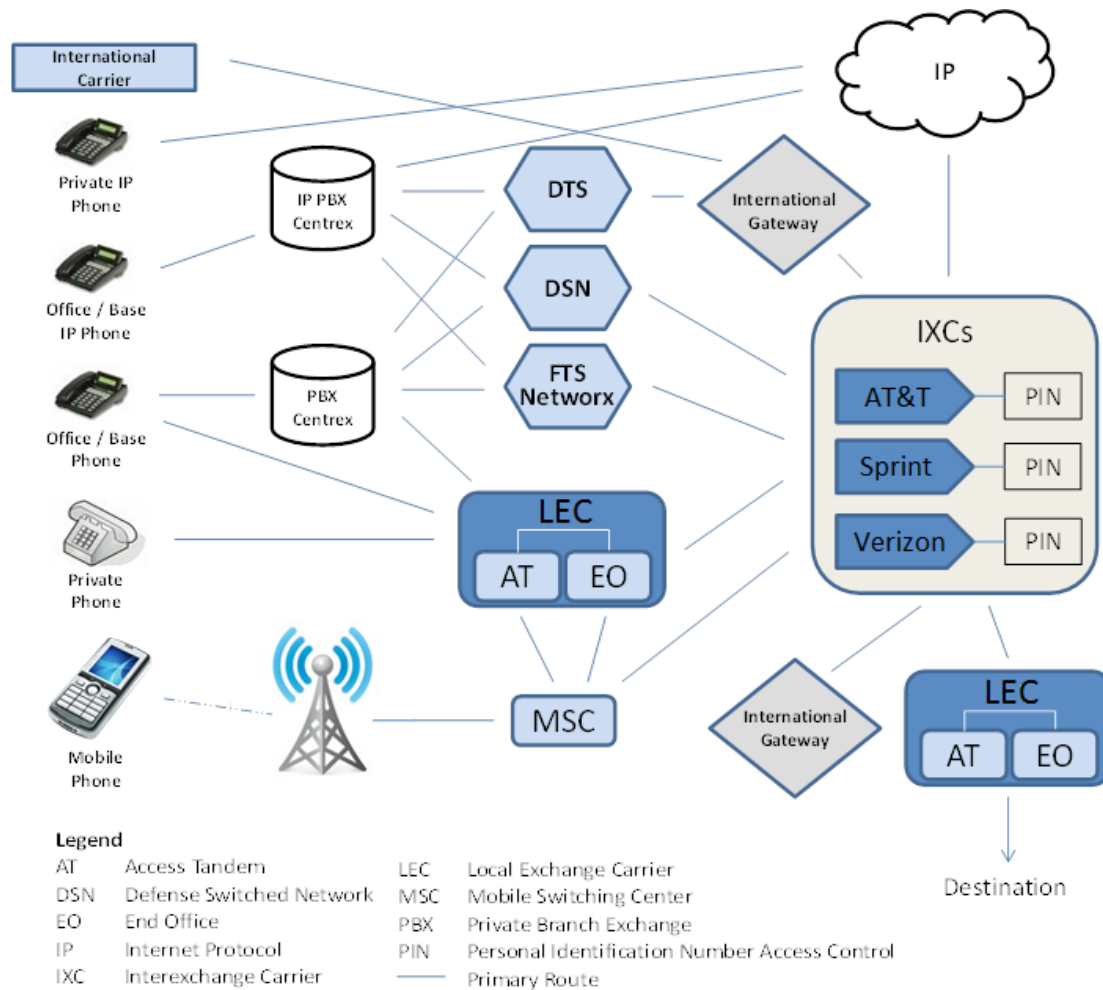
GETS user organizations are also required to test the proper functioning of GETS on a regular basis. As the carrier's telecommunications networks transition to packet-switching technology, regular testing is necessary to ensure continued GETS functionality. All GETS dialing patterns (such as the 710 universal GETS access number, GETS toll-free carrier-specific access numbers, and Carrier Access Codes [if applicable]) should be tested using typical destinations, including the GETS test call number.

BASIC GETS ACCESS

Access to GETS is possible through standard PSTN access arrangements. GETS can be accessed from a telephone service connected directly to a LEC end office, cellular service, an IP telephony service, or from telephones connected to the PSTN through a Private Branch Exchange (PBX) or Centrex (circuit-switched or IP). Figure 1 shows one of many possible connection architectures.

In addition to these normal PSTN access methods, the Federal Technology Service (FTS) Network, the Diplomatic Telecommunications Service (DTS), and the Defense Switched Network (DSN) provide alternatives for access to GETS for authorized users. The GETS access requirements for user sites are described below.

Circuit switched solutions and packet switched (IP) solutions are applicable to each of the categories. The "Private IP Phone" in Figure 1 includes cable phone service providers. Note that a traditional, or legacy, phone could be used to access a VoIP service using "Terminal Adapter" equipment that converts the legacy analog communication to VoIP packets.



ACCESS FROM PRIVATE AND PUBLIC TELEPHONES

Private residence telephones, public pay phones, and many business and government phones are connected directly to a telephone access provider's network and can be used to place GETS calls. However, a dial tone is required to place a GETS call. If GETS users experience dial tone delays during call congestion, users can minimize delays by remaining on the line, rather than hanging up and dialing again. Remaining on the call prevents interruption of the LEC's dial tone queuing process and provides dial tone in turn to the customer who has been holding for the longest period of time.

Most pay phones will accept the GETS universal access number (710-627-4387). If the pay phone does not accept the universal access code, users should dial the GETS Toll-Free access numbers (located on the back of the GETS card), or contact GETS User Assistance at 1-800-818-4387 for special instructions on completing the GETS call.

ACCESS FROM PBXS AND CENTREXES

A PBX or Centrex switching system provides customized telephone service for an office, building, or facility. The legacy PBX or Centrex service is connected to the telephone service provider's network via circuit-switched trunks. An IP PBX or Centrex will be connected to the VoIP service provider via an IP connection. VoIP telephone calls follow the same procedures provided on the GETS card. Users can access GETS from the PBX or Centrex by dialing the appropriate local access code (for example, dialing 8, 9, 94, etc.). A PBX or Centrex service may provide the additional benefit of call queuing while waiting for a dial tone. Also, to ensure incoming GETS calls are promptly answered, these systems can be configured to route calls destined for a busy telephone to an alternate answering position. These PBX or Centrex systems may also provide users access to other networks, such as FTS Networkx and DSN.

CONSIDERATIONS COMMON TO LEGACY AND IP PBXS/CENTREX

GETS access through a PBX or Centrex requires the following:

- The 710 Numbering Plan Administration (NPA) code must be opened (see Appendix A: 710 NPA for the U.S. Government).
- All telephones designated for GETS use must be able to access the LEC end office or VoIP service provider without blocking or toll restriction on the 710 NPA code, similar to 800 toll-free calls. Toll restricted trunks from the facilities to the telephone access provider's network must exempt the 710 NPA code from the toll restrictions as is done with toll-free NPA codes (for example, 800 and 888).
- The user organization should verify with the telephone access provider that the access network routes 710 calls to a GETS interexchange carrier (such as AT&T, Sprint, or Verizon).
- GETS user organizations should provide basic customer site telecommunications equipment or special telecommunications equipment, such as a standard desk sets, Secure Terminal Equipment (STE), mobile phones, data modems, or facsimile devices, if required.

CONSIDERATIONS FOR IP PBXS/CENTREX

IP PBXs and Centrex may access the VoIP network via a Session Border Controller (SBC). The SBC serves as a boundary between networks, and provides security and addresses translation. The SBC is a key network element in providing priority treatment to GETS calls. Another important network element is the gateway network element which provides protocol conversion, typically between circuit-switched and IP networks. A facility's telecommunications manager should work with the telephone access provider to ensure these network elements are configured properly to provide priority treatment for GETS calls. User organizations using VoIP at an enterprise level can enhance priority treatment by following these steps:

- Avoid the use of VoIP service providers that utilize the public Internet for service connection, such as Vonage®, 8x8© and magicJack™. The Office of Emergency Communications (OEC) does not recommend these types of VoIP service providers for facilities hosting GETS users since priority treatment for calls cannot be provided on the public Internet.
- Work with the telephone access provider to ensure network IP protocol parameters are set properly to provide priority treatment as well as enable important IP PBX/Centrex features such as “Early Media Cut-Through” described in the next section.

For VoIP calling, packet switching equipment such as a router may be required at the facility along with the IP connection to the facility telephone access provider. Each facility telecommunications manager should advise GETS users concerning the access procedures for their facility's customized telecommunications equipment.

EARLY MEDIA CUT- THROUGH FEATURE

For facilities using an IP PBX or Centrex, the equipment must be configured to allow for follow-on dialing that passes dual-tone multifrequency (DTMF) signaling after a call is connected. This permits the GETS user to enter the personal identification number (PIN) and destination number.

If the “early media cut-through” feature on an IP PBX providing VoIP telecommunications is not properly configured, callers may not hear the prompts for entry of the GETS PIN and destination number. In addition, entered PIN digits will not be received by the GETS authentication function.

The “early media” refers to the exchange of media on a new connection prior to receiving a confirmation (sometimes called “answer supervision”) that an end-to-end connection has been established, which means that the target destination has accepted the call.

Billing typically commences once the end-to-end connection has been established, IP PBXs may have early media cut-through disabled as the factory default.

Not enabling this feature can prevent GETS calls from being processed in the Next Generation Networks. OEC recommends that facility telecommunications managers review with their telephone access providers the early media cut-through provisioning in IP PBXs to ensure that GETS calls can be authenticated and completed. OEC also recommends that early media cut-through be provisioned in all network components to allow GETS calls to be completed.

Facility telecommunications managers should contact their IP PBX vendors for provisioning instructions. For a Cisco IP PBX, for example, one possible solution is found in Cisco documentation, which says to provision the “voice rtp send-recv” command to establish the audio path in both directions (cut-through) prior to receiving a connect message from the PSTN. Another possible Cisco solution is enabling the following Cisco PBX setting: Device > Device Settings > SIP Profile Trunk Specific Configuration > Early Offer support for voice and video calls (insert MTP if needed). The facility telecommunications manager should consult with vendor technical assistance to determine the appropriate solution.

GETS ACCESS FROM NON-WIRELESS PRIORITY SERVICE CELLULAR COMMUNICATIONS DEVICES

While GETS calls can be placed from cellular communications devices that are not subscribed to the Wireless Priority Service (WPS), a GETS card alone will not provide priority on initial access from a mobile handset to the wireless telecommunications networks. Therefore, GETS users requiring priority wireless access are encouraged to also subscribe to WPS. WPS used in conjunction with GETS will provide high probability of call completion across the wireline and the wireless networks, end-to-end, during times of high traffic volume.

GETS users should be able to access GETS through most Mobile Switching Centers (MSCs). However, cellular technology is not without limitations. GETS users may experience wireless access problems, especially while roaming out of the home area or when accessing the network via femtocells or microcell network extenders.

ACCESS FROM GOVERNMENT NETWORKS

OEC, working with the General Services Administration, has incorporated GETS access through interoperability with FTS Networkx. GETS interoperability with FTS Networkx permits GETS users to dial 1+710-627-4387, which then routes the call for GETS user authentication and call completion. This access takes advantage of the off-net features of FTS Networkx. GETS users supported by this network benefit by having an additional access route to GETS.

GETS can be accessed from DTS by following these instructions:

1. After receiving a dial tone, the user dials “96”, which is the DTS PSN access code.
2. Next, the user should dial 1+710-627-4387, the Universal GETS Access Number.
3. After the user hears a tone, s/he should enter his/her PIN.
4. After the prompt, the user enters the destination number

GETS can be also accessed from the DSN through the following steps:

1. The user first dials the “94”, which is the DSN PTS access code.
2. Next the user dials 1+710-627-4387, the Universal GETS Access Number.
3. The call will then be routed off-net to a GETS LEC enhanced end office for subsequent GETS call processing.

This end office should also support access to GETS Alternate Carrier Routing, which will route the call to alternate GETS interexchange carriers if the intended GETS interexchange carrier is not available for routing calls.

OPTIONAL PSTN ENHANCEMENTS

GETS user organizations are encouraged to consider a number of optional enhancements for improving user access to the PSTN and GETS if special survivability or reliability requirements exist. Although these optional enhancements are not necessary to use GETS, they will improve the probability of reaching an end office or obtaining a dial tone after damage has occurred to the network or during severe network congestion. At the user organization's request, the GETS Service Support Structure provides on-site support for the development of a plan for improved access to GETS. Requests for special site-specific analysis and planning for optional features should be submitted to the GETS Program Management Office. These optional analysis and planning activities will likely be funded by the requesting organization.

Circuit-switched Enhanced Call Completion (ECC) features are a set of network services that increase the probability that a GETS user will complete a call. The ECC alternatives for GETS may be divided into two enhancement categories: local loop improvements and dial tone access improvements, which are discussed below.

Local loop improvements include providing several local routing alternatives. Organizations with critical NS/EP requirements for specific users or facilities should consider acquiring diverse routing or dual homing from the PBX to the normal LEC end office or to a second end office. Both services would provide trunking over more than one route to an end office. A critical user may desire direct access lines that bypass the PBX and provide dial tone directly from the end office.

Dial tone access improvements includes Essential Line Service (ELS), which may be available from LECs (contact your LEC for availability) and provides dial tone on a priority basis to lines marked in the PSTN switch. One of the key factors in mitigating potential dial tone delay by using ELS is having GETS users assigned to stored program control switches. These control switches are available in nearly all metropolitan areas. ELS may also be known as Dial Tone Priority, Essential Service List, or Essential Service Protection.

FOR ADDITIONAL INFORMATION

Please contact the DHS Priority Telecommunications Service Center at 866-627-2255
or via email support@priority-info.com.

APPENDIX A – 710 NUMBERING PLAN AREA (NPA) FOR THE U.S GOVERNMENT



Number: PL-465
Date: March 7, 2014
Subject: 710 Numbering Plan Area (NPA) for the U.S. Government
Related Previous Planning Letters: PL-172, IL-94/01-002

General Description

NANPA publishes this Planning Letter (PL) as an update of PL-NANP-172 dated April 26, 1999. The 710 NPA was assigned in 1983 to the U.S. Government for emergency services. The Office of Emergency Communications (OEC) within the Department of Homeland Security (DHS) of the U.S. Government has notified the industry that the non-geographic 710 NPA should allow unrestricted and ubiquitous access in all international and domestic carriers for authorized users of the 710 NPA. The 710 NPA will be treated as non-geographic with per-call compensation provided by the U.S. Government.

The 710 NPA has provided successful access to the Government Emergency Telecommunications Service (GETS) in U.S. and Canadian local exchange carrier and cellular/PCS networks. GETS became operational on September 30, 1994, but the service and its dialing procedures have evolved from the description in IL-94/01-002 and PL-NANP-172. To augment the information provided in the earlier letters, the following dialing procedure also applies:

- Dialing 1+710-NXX-XXXX provides access to an emergency service for authorized users. The 710 NPA provides access to a tariffed service of the GETS interexchange carriers (AT&T, Verizon, and Sprint) and the call is billed to the U.S. Government.

In order to provide universal 710 accessibility in the appropriate service mode, owners and managers responsible for user-to-network access need to ensure their switching systems including Government and civilian enterprise locations, privately-owned payphones, cable, DSL, and Voice over IP (VoIP) systems, and privately-owned PBXs are programmed to accommodate the 710 NPA. Further, IP switching systems need to be configured to permit early media cut-through to accommodate GETS calling-card dialing, which include tone prompts and the collection of DTMF digits. Accordingly, the 710 area code will be unblocked to network access, including equal access. Access to 710 will be provided from any cellular/PCS phone, whether or not the phone is subscribed in the area where the call is placed. Section 4.7 of the LERG™ Routing Guide addresses NPA 710.

To the extent that the above requirements are different from those identified in the previous planning letters, they are subject to negotiation between individual service providers and the OEC. The Office of Emergency Communications/DHS intends to achieve wide recognition for the non-geographic 710 NPA by drawing attention to this letter on the NANPA website: <http://www.nanpa.com>.

Contact Information

Questions concerning the 710 area code and operational questions about GETS should be directed to Mr. Frank J. Suraci, GETS Program Manager – OEC/DHS, at 703-235-4209 or frank.suraci@hq.dhs.gov.