



# Multiline Telephone Systems MLTS

The California Chapter of the National Emergency Number Association  
in collaboration with  
The California County Coordinators Task Force

Provides a Response to CPUC Questions on MLTS



# CALNENA

The California chapter of the National  
Emergency Number Association



## CALNENA's Mission:

- Foster a reliable and continuously improved emergency telephone number network through research, planning, training and education.
- Represent our members before communications regulatory agencies and policy making bodies;
- Strive toward providing all visitors and residents of California immediate access to emergency public safety services to preserve life and protection of property.



## CALNENA's Membership:

- 9-1-1 professionals from over 500 public safety answering points (PSAPs) in California.
- Commercial vendors providing 9-1-1 equipment and services to PSAPs.
- CALNENA has two appointed members on the State 9-1-1 Advisory Board.

# County Coordinator Task Force

## CCTF

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### CCTF Mission:

- Share the combined knowledge and experience of County Coordinators throughout California, in partnership with the State OCIO Office. Train and mentor all County Coordinators for the betterment of 9-1-1 service delivery.
- Serve on the OCIO Emerging Technologies Workgroup to gather knowledge and data regarding new technologies, products, and proposed regulations, to determine their impact on PSAP operations and County Coordinator responsibilities.
- Support the evolution of 9-1-1 and related technologies, equipment, infrastructure, and services.

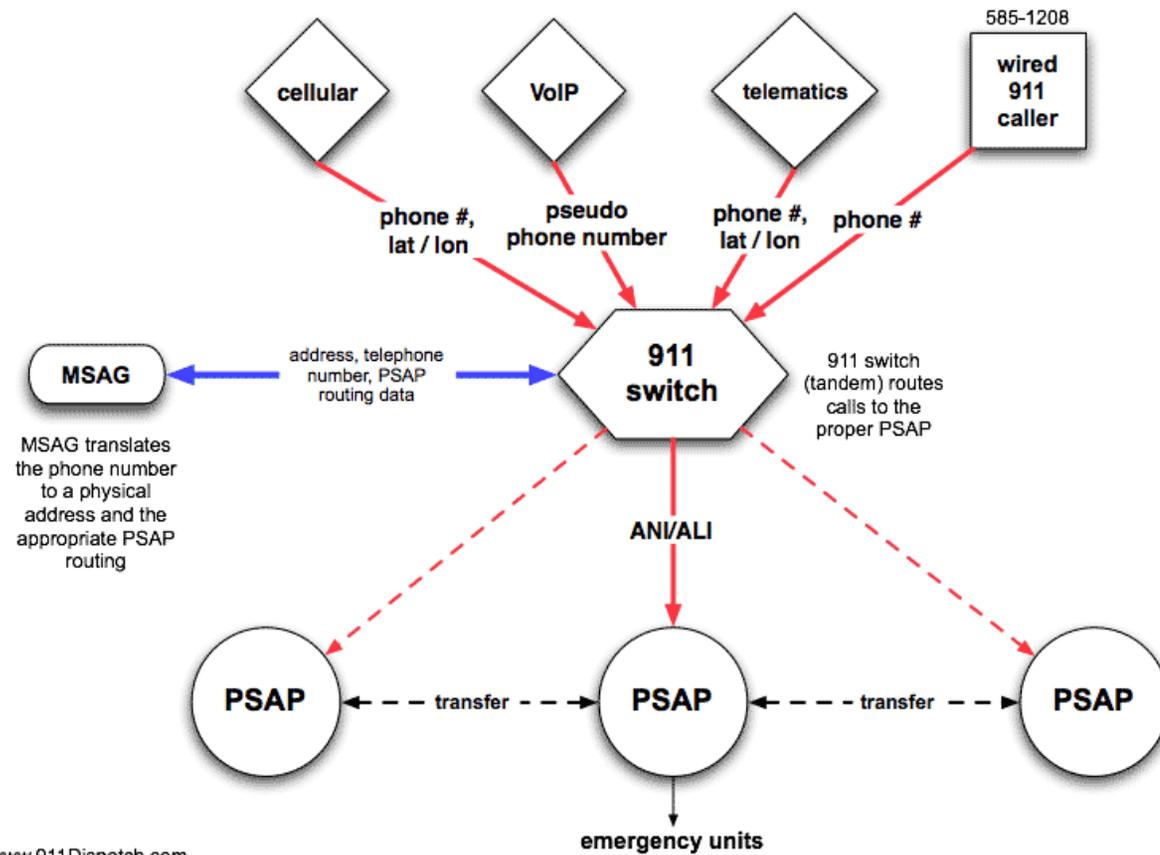
# State 9-1-1 Advisory Board

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- This Board was established in 2005 to provide advice to the State Office of the Chief Information Officer on policies, practices and procedures for the Public Safety Communications Division.
- The Board reviews technical and operational standards for the California 9-1-1 system and ensures consistency with the National Emergency Number Association (NENA) standards.

# How 9-1-1 Works

## Typical 9-1-1 System



# The Trouble with MLTS

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- Calls from a multi-line telephone system typically refer first responders to a billing address, and while technology is available for more specific location information, it is not widely used.
- This causes response delays and resource response to incorrect locations.

# Enhanced 9-1-1 for Multi-Line Telephone Systems

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- The public, and public safety agencies who serve them, increasingly rely on the Enhanced 9-1-1 system to provide dependable and precise information about the caller's location and a reliable number to call back in order to reach the caller.
- However, in some cases 9-1-1 calls made from telephones connected to a MLTS may not be precisely located by the 9-1-1 system, eliminating some of the benefit of Enhanced 9-1-1.
- The inability to respond directly to the caller with minimal delay increases with the type of calls where the caller for some reason cannot provide location information to the PSAP.

There are 20,000 offices in this complex. Where do emergency responders start looking?



# Representative Problems reported by PSAPs and 9-1-1 County Coordinators

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- San Francisco. Someone called 9-1-1 from a convalescent home in Alameda county and that call was routed to SFPD. The PBX host listed an address in SF, so it came into our office on 9-1-1. After some minutes, the dispatcher determined it was actually in Union City and transferred the call. It did result in a response delay.
- Palo Alto. A chain store was robbed and someone was shot. The 9-1-1 caller could not speak on the phone. The VoIP system for the entire chain of stores showed the generic address for the headquarters and the call was routed to Sunnyvale PD. It took quite a while to locate the store and respond. The city asked the chain to correct the problem, but as there is no legal mandate for them to do so, we can not force them.
- Kings County. We recently had a call from a school for the disabled. The primary school is located within the city limits. That call was received by the city. City sent fire/EMS and found that it was in the county at a satellite school that the PSAPs didn't even know about. Response was delayed and took even longer. The response was significantly delayed.

# Representative Problems Reported by PSAPs and 9-1-1 County Coordinators

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- Los Angeles County. We encounter most of our PBX problems with large hospitals in our city, public schools, large businesses and City facilities. The callback number usually displays a main desk or switchboard number. We typically get someone who doesn't have a clue that a 9-1-1 call was made. That's if we actually reach a live person, Many times its just a phone tree.
- When a 9-1-1 call is made from the animation studios, ALI/ANI only transmits one location/address for us to respond to, regardless of where the caller may be; huge problem if the caller doesn't know where they're calling from within the studio or can't speak for some reason (anaphylactic problem). There are inherent delays to fire or medical while responders wait for the correct location.
- A culinary school has and continues to have numerous sites spread out through the city, but only one billing address on the ALI/ANI , so we've responded to one address only to find out that the medical problem (cut hand/fingers) is in another district altogether.

# Representative Problems reported by PSAPs and 9-1-1 County Coordinators

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- El Centro County. Our county offices use a multi line telephone system but when they dial 9-1-1 it comes up on our screen as only located at the source. This creates a nightmare for us as the County has multiple buildings in a 4 radius block we are unsure unless advised where to send the resourced needed.
- Placer County. “At this time, if a 9-1-1 call is made from the North Lake Tahoe office [of a power company], the call goes to the South Lake Tahoe 9-1-1 Center in El Dorado County because the PBX information shows the South Lake Tahoe office address. Should an emergency arise and 9-1-1 call not be directed properly, a life threatening delay could occur.
- Siskiyou County. There are two different college campuses, one is the satellite campus and one is the main campus in another city. The VoIP provider/installer didn't test to make sure the calls were going to the right PSAP. Basically, nobody did any tests to see that the call were routed correctly.

# ALI Display - PBXb Caller

Additional address information is located here.

The screenshot displays a 911 dispatch console interface. At the top, the search bar contains the number '415-575-0737'. Below the search bar, the call details are shown: Tel # 415 575-0737, Ext, Class PBXb, Caller CCSF-POLICE, Main # 575-0737, Address 1011, TURK, SF, CA, Exact, Esn 331 - SF ECD, and Tell Tale SAN FRANCISCO PD, SAN FRANCISCO FIRE. The interface includes various control buttons such as 'Copy To ALI', 'Clear', '+Details', 'MSB', 'ACD Logon', '911 Xfer', 'Q stats', 'Not Ready', 'Park', 'Redial', 'ACD', 'In House', 'MUTE', 'HOLD', 'Open Panel', 'CONF', and 'Transfer'. On the right side, there are call status indicators for 'INT (&BELL)', 'CHP', 'ALLIED', 'FD/EMS', 'POLICE', and 'SUICIDE'. The date and time are displayed as 1/21/2010 13:54:10 JP1.

The class of service is displayed here. This tells the call taker that the call is from a PBX.

# Recommendations for Regulations

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- The National Emergency Number Association (NENA) has created model legislation to help states develop statutes and rules requiring sufficiently precise caller location information for 9-1-1 calls made using Multi-Line Telephone Systems (MLTS).
- The model legislation ensures 9-1-1 callers can be located when dialing from a business, shared tenant facility, hotel, hospital, or similar enterprise environment.
- Our group supports the recommendations of NENA and believes this should be used as the model for designing MLTS regulations in California.

# Shared Residential MLTS Service

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Operators of Shared Residential MLTS serving residential customers are required to assure that the telecommunications system is connected to the public switched network such that calls to 9-1-1 result in one distinctive Automatic Number Identification (ANI) and Automatic Location Identification (ALI) for each living unit.

# Business MLTS

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For a MLTS serving business locations, the MLTS Operator shall deliver the 9-1-1 call with an Emergency Location Identification Number (ELIN) which will result in one of the following:

- (a) an ERL which provides a minimum of the building and floor location of the caller, or
- (b) an ability to direct response through an alternative and adequate means of signaling by the establishment of a private answering point. The MLTS Manager must make reasonable efforts to assure that 9-1-1 callers are aware of the proper procedures for calling for emergency assistance.

# Business MLTS

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## **Exceptions to the above requirements are as follows:**

- (a) Workspaces with less than 7,000 sq. ft. on a single level, located on a single contiguous property, are not required to provide more than one (1) ERL.
  
- (b) Key Telephone Systems are not required

# Shared Telecommunications Services

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Providers of Shared Telecommunications Services shall assure that the MLTS is connected to the public switched network such that calls to 9-1-1 from any telephone result in ALI for each respective ERL, as defined in this section, of each entity sharing the telecommunication services.

# Temporary Residence

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Businesses providing Temporary Residence MLTS service shall permit the dialing of 9-1-1 and the MLTS Operator shall ensure that the MLTS is connected to the public switched telephone network. Where PS-ALI records are not provided for each individual station, the MLTS operator of the Temporary Residence shall provide specific location information of the caller to the PSAP.

# ALI Database Maintenance

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Where applicable, MLTS Operators must arrange to update the ALI database with appropriate MSAG valid address and callback information for each MLTS telephone, such that the location information specifies the ERL of the caller. These updates must be downloaded or made available to the ALI database provider as soon as practicable for new MLTS installation, or within one business day of record completion of the actual changes for previously installed systems. The information is subject to all federal and state privacy and confidentiality laws.

# Industry Standards

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MLTS Operators shall be considered to be in compliance when the MLTS complies with E9-1-1 generally accepted industry standards as adopted by the Federal Government (specifically the Federal Communications Commission) or as adopted by the State (agency to be defined by each State) until such time as there is a nationwide standard. The telecommunication local exchange carriers and ISPs are responsible for providing interconnectivity through the use of generally accepted industry standards.

# Dialing Instructions

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Many MLTS require a caller to dial a prefix, usually the digit 9, before dialing any outgoing call. The MLTS Manager should be required to take all reasonable efforts to assure that potential 9-1-1 callers are aware of the proper procedures for calling for emergency assistance. Dialing instruction requirements shall apply to all MLTS Operators whether any other exemptions apply.

# MLTS Signaling

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MLTS shall support 9-1-1 calling by using any generally accepted industry standard signaling protocol, designed to produce an automatic display of caller information on the video terminal of the PSAP call-taker, unless the MLTS Operator is exempt or a waiver has been granted in accordance with State rules and regulations.

# MLTS Operator Education

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Public agencies providing 9-1-1 educational programs are encouraged to develop a program to educate MLTS Operators related to accessing 9-1-1 emergency telephone systems and coordinate adequate testing of the MLTS interface to the 9-1-1 system.

# Limitation of Liability

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No manufacturer or provider of MLTS, MLTS Manager, MLTS Operator or 9-1-1 Service Provider shall be liable for any civil damages or penalties as a result of any act or omission, except willful or wanton misconduct, in connection with developing, adopting, operating or implementing any plan or system required by this act.

# Exemptions

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In facilities that are authorized by law, that offer alternative and adequate means of intercepting the emergency calls, those facilities shall provide training to individuals intercepting the call in accordance with applicable local emergency telecommunications requirements.

# Exemptions

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## MLTS in Areas Without Enhanced 9-1-1 Service:

MLTS Operators in areas without Enhanced 9-1-1 service are exempt from the signaling and database maintenance regulations. Existing MLTS shall comply within five (5) years after E9-1-1 service becomes available or immediately upon installation of a new MLTS after E9-1-1 service becomes available. If E9-1-1 service becomes available more than 5 years after the effective date of this Act, MLTS operators shall comply with the signaling and database maintenance regulations within 12 months.

# Exemptions

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## Non-Dispersed MLTS:

MLTS with a single addresses are exempt from the signaling and database maintenance regulations. Requirements for MLTS Managers to provide dialing instructions shall still apply.

# Waiver Provisions

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A designated authority in accordance with State rules and regulations may grant waivers. The local exchange carrier and ISP are not authorized to grant waivers or enforce compliance with this act.

Nothing in this section is intended to relieve employers of their obligations under federal and state workplace occupational safety and health statutes and rules.

# Effective Date

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The provisions of this act shall take affect 6 months after enactment where E9-1-1 MLTS support service is available. MLTS installed twelve (12) months or more after the effective date of this Act shall comply upon installation. Existing systems, or those installed within 12 months of the effective date of this act shall comply within five (5) years after the effective date of this Act.

# Effective Date

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E9-1-1 MLTS support service is deemed to be available if:

- a)the PSAP can accept ELIN information from the MLTS using generally accepted industry standard interfaces;
- b)facilities are in place to accept and store the ERL information provided by the MLTS Operators; and
- c)the PSAP is equipped to utilize the ERL information.

# The Importance of LOCATION and Background of E9-1-1

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The development of Enhanced 9-1-1 allowed the telephone company to deliver the callers street address to the PSAP.

Many, many examples exist where callers, who were unable to speak or communicate, were saved because of the Enhanced 9-1-1 capability.

Technology has adversely affected the ability for 9-1-1 centers and first responders to “find” callers!

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- The Advent of private phone switches (PBX's)
- The “Internet telephony” explosion – Vonage, SKYPE, Comcast, enterprise VoIP PBX's
- With no “pair of wires” and the ability to move your phone around, our ability to “know where you are” is gone. Why this is important? (can't talk, under duress, etc.)
- 101 California shooting – July 1, 1993 We are asking the CPUC to enact regulations that require MLTS users to deploy equipment that provides specific location information as recommended in the NENA model legislation.

# Mandating E911 for MLTS is Essential

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- Examples of other mandated “life safety” requirements: exit signs, fire extinguishers and fire control systems, others, have long been mandatory by fire and building codes.
- In many cases, employees in the private and public sector don’t even know that their location (street address) is NOT BEING PRESENTED to the local 9-1-1 PSAP
- Wireless carriers have already shouldered this burden under FCC mandate, with partial cost recovery.
- 15 states have existing MLTS/PBX 9-1-1 legislation, with 5 more proposed/pending

# Conclusion

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- The public expects public safety entities to employ technology that provides their location in an emergency.
- This legislation will ensure that business telephone systems provide these critical enhanced 9-1-1 services that are essential to the delivery of emergency services.