

FILE

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Petition of the NENA/APCO
Joint Task Force Requesting the Commission to
Promulgate Rules and Set Standards Governing
Next Generation 9-1-1 in a Competitive 9-1-1
Market.

Case No. 08-287-TP-UNC

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PETITION FOR RULEMAKING

The Ohio Chapters of the National Emergency Number Association (NENA) and the Association of Public Safety Communications Officials (APCO International), collectively referred to herein as the "NENA/APCO Joint Task Force" (or "Petitioners"), hereby petitions the Public Utilities Commission of Ohio ("Commission") to open a rulemaking proceeding to address the following:

- (a) The need for 9-1-1 systems to be capable of provisioning, processing, routing, transporting and delivering all 9-1-1 calls regardless of the type of device used to make the call or the technology deployed to deliver it (i.e., wireline, wireless and voice-over-Internet protocol or "VoIP");
- (b) The emerging issues associated with future (i.e., "Next Generation") 9-1-1 systems ("NextGen9-1-1") including but not limited to such issues as:
 - i. Processing of 9-1-1 calls containing video, photo and text messages;

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- ii. Use of advanced data retrieval (e.g., medical information) delivered to first responders along with other critical data (e.g., caller location);
 - iii. Engineering and provisioning requirements to assure appropriate quality of service is maintained in a Next Gen environment. (For example, are redundant 9-1-1 trunks in an IP-based network environment required?); and
 - iv. Permitting a VoIP provider to use a “nomadic VoIP dynamic ALI (automatic location information) solution” instead of putting ALI records in the 9-1-1 database;
- (c) The need to maintain, in a NextGen9-1-1 environment, public safety’s high standards achieved over decades for such items as:
 - i. Qualified access to number resources;
 - ii. Qualified access to 9-1-1 network and data elements (i.e., only by certificated entities);
 - iii. Data accuracy (e.g., precise caller location);
 - iv. Network reliability and resiliency and;
 - v. Systems and network security

... while appreciating the inherent differences in the various technologies; and
- (d) Interconnection, interoperability and pricing issues associated with an evolving, competitive marketplace, such as:

- i. Offering services packaged in such a way that public safety is able to select the vendor or vendors that most appropriately meets their needs; and
- ii. Establishing pricing and funding mechanisms that provide parity for competitive providers and allows collected surcharge funds to be used by public safety as best serves their constituents (applying funds as stipulated in legislation).

Such rules would foster the purposes of Ohio Revised Code Sections ("R.C.") 4931.60 through 4931.70 and would lead to efficiencies and lower costs contemplated by R.C. 4931.65 pertaining to countywide 9-1-1 systems. The Commission has the authority to adopt rules to carry out these sections pursuant to R.C. 4931.67. The reasons supporting the necessity for promulgating NextGen 9-1-1 rules and standards are set forth in the Memorandum in Support below.

MEMORANDUM IN SUPPORT

Collectively, Petitioner's members serve all of Ohio's 88 counties. In their role as the state's public safety answering points ("PSAPs"), Petitioners' members answer all of Ohio's 9-1-1 emergency calls and dispatch police, fire and medical first responders who then render emergency assistance.

For four decades, Petitioners' members have been compelled to purchase various emergency communications services from the incumbent local exchange carrier (ILEC) operating in a monopoly marketplace. The type of services PSAPs typically purchase from the ILEC includes ALI, ANI (automatic number information), MSAG (master street

address guide) management, selective routing and related transport facilities (dedicated ingress and egress 9-1-1 selective router trunks). For a more detailed description of the historical evolution of 9-1-1 and the change in regulation now needed to accommodate the changes that have already occurred in technology and in the public safety marketplace, see attached "*NENA/APCO Joint Task Force Comments: NextGen 9-1-1 and Alternative Providers, February, 2008*", marked as "Attachment A" and incorporated herein. This market dynamic is now changing (including in Ohio where the Commission is taking a leadership role for which Petitioners commend the Commission and its staff). Recently, the Commission approved the certification of Intrado Communications, Inc. ("Intrado Comm") as a Competitive Emergency Services Telecommunications Carrier permitting it to provide communication products and services to public safety agencies as an alternative to the ILEC. The certification of Intrado Comm signals the Commission's agreement that PSAPs should benefit from competition by having a choice of the source of, and price they pay for, the 9-1-1 offerings they buy in furtherance of their life and property saving mission.

Simply put, ILECs have not kept pace with technology innovation in the 9-1-1 market, and the legacy 9-1-1 system, while it has served the public well, is rapidly losing its ability to support new devices and technology. Public safety demand has driven alternatives that are available today. While failing and refusing to meet this demand, ILECs nonetheless have chosen to leverage their incumbent, monopolist status contrary to the best interests of the public in order to delay and obstruct alternative offerings. Inevitably, ILECs will either compete on a level playing field, or they will be left behind.

While public officials facilitate the adoption and roll out of these new technologies, they must strike a delicate balance: on the one hand, they can not allow themselves to be overly bureaucratic which could slow down the timely deployment of life-saving services, and on the other hand: care must be given to assure survival of crucial service standards on which America's successful 9-1-1 system was built, i.e., the need to maintain quality in a NextGen 9-1-1 environment. Attached, marked as "Attachment B", is a copy of Intrado Comm's "***Recommended 9-1-1 Service Standards***", which represents that company's attempt to capture the public safety industry's *de facto* standards developed over several years and which may be used to bridge the industry to a set of NextGen standards. At a minimum, these recommended standards can serve as a starting point for what the Commission considers appropriate in a NextGen 9-1-1 rulemaking.

For public safety to reap the benefits of truly meaningful competition, it is imperative to assure that this nascent market is not prematurely suffocated by pricing disparities or unfair operational practices left over from an outdated monopoly model.

WHEREFORE, Petitioner urge that the Commission:

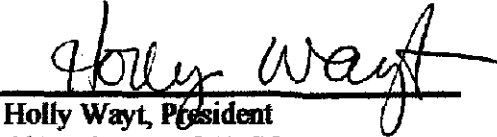
- (1) Initiate a rulemaking proceeding to promulgate rules and set standard for NextGen 9-1-1 in Ohio;
- (2) At the Commission's discretion, arrange workshops for discussion among Commission Staff and interested parties prior to issuing proposed rules and standards;
- (3) Issue proposed rules and standards for comment and reply by interested parties;

- (4) Adopt final rules and standards within three months of the initiation of the rulemaking proceeding.

Respectfully submitted on behalf of
Petitioners, the NENA-APCO Joint
Task Force



Kim Brandt, President
Ohio Chapter of NENA



Holly Wayt, President
Ohio Chapter of APCO

Attachment A

NENA/APCO Joint Task Force

Comments to PUCO

NextGen 9-1-1 and Alternative Providers

February, 2008

NENA/APCO Joint Task Force – Comments to PUCO
NextGen 9-1-1 and Alternative Providers
February, 2008

For the past 3 decades following the first deployment of 911 in America, public safety agencies and incumbent 911 service providers have been good stewards of traditional 911. They have jointly operated a remarkably reliable system and have achieved high standards which the public has come to expect and rely on. A few notable examples include:

- Use of pre-provisioned caller location information that allows a landline 911 call to be routed to the appropriate public safety answering point (known as a "PSAP") and that allows first responders to know where to go to render help
- Location data that is highly accurate and secure, and
- Redundant network architecture that provides a level of service that is robust, reliable and connected "natively" to the 911 network so that emergency calls terminate at professional equipment manned by trained call takers.

These are all features that we believe must remain part of future architectures regardless of the type of technology or device used to make the call; but unfortunately, that is not occurring.

Things have dramatically changed in the last 10 years. America has witnessed remarkable consumer adoption of both wireless telephony and, most recently, voice over Internet Protocol (known as "VoIP") phone service. One prominent wireless association, CTIA, recently told the FCC that 13.6% of America's households are "wireless only" with no landline service, and this number is expected to be almost 1/3 of all households by 2012. Industry reports indicate that VoIP phone service is on a similar meteoric rise.

These new technologies offer remarkable features such as video, text messaging and an expanding array of applications. Studies show that consumers believe these advanced features interact with the 911 network and thus can be invoked today with a 911 call, but unfortunately, that is not the case.

Not entirely unlike traditional wireline 911 calls, it is possible to send wireless and VoIP 911 calls to a PSAP, but the system is constrained to transmission of voice and very basic data: the call back number and, in the case of a typical wireless or VoIP call, a loose approximation of the caller's location. In other words: the high standards established in connection with wireline 911 service have already been compromised with the deployment of these new technologies.

Let's use location accuracy as an example: because wireless phones are mobile, which is also often the case with IP-based callers, location information must be dealt with real-time and dynamically, and pre-provisioning plays a very different role in this environment. Technology companies have provided partial solutions to this particular problem, but caller location information is far less accurate than that of a wireline 911

call ... with no foreseeable time when "technology parity" will occur. The use of these new technologies and associated devices involves federally-mandated delivery of 911 calls to PSAPs ... accompanied by certain requirements for routing and location accuracy. These mandates, in part, fall to the states to oversee, but they fall entirely to PSAPs to accommodate.

State legislatures, including Ohio's, are grappling with such issues as:

- Whether statutory or regulatory obligations can or should be placed on VoIP providers,
- Funding of wireless 911 and next generation 911 solutions resulting in "technology neutral surcharges; that is: parity applied to all telephone or "telephone-like" service providers
- Misuse of funds designated for 911
- Imposition of the obligation to deploy 911 for PBX extensions ... not just PBX pilot lines; and
- Generally, how to lay the foundation for coming decades for the inevitable deployment of the next generation 911 system.

PSAPs are themselves grappling with acute circumstances such as insufficient funding that is needed for equipment upgrades and expanded facilities as well as the staffing and training necessary to handle the additional calls from these new technologies. If that's not dire enough, public safety purchasers are often locked into a monopoly marketplace where they're forced to deal with an incumbent that has failed and refused to address the inevitable need for change - including migration to a next generation 911 system. It is clear that most incumbents have abandoned their leadership role in lieu of investment in more profitable, commercial broadband applications. And, in the process, incumbents have apparently been content to not only abandon public safety; it seems they also want to interfere with any other provider trying to fill the vacuum they've left behind. We are aware of your recent Order establishing a "CESTC", or Competitive Emergency Services Telecommunications Carrier, which should go a long way toward putting public safety's interests first again.

The actions of such incumbents are somewhat understandable. Incumbents are often both so-called "wholesale" 911 service providers as well as local exchange carriers, and some have their own VoIP offerings, and they compete with wireless and VoIP providers who themselves do not have to divert precious investment dollars on the obligation to serve all carriers as the region's 911 service provider. By their inaction, these incumbents have thrown open the door for regulators and competitors to offer public safety an alternative to a legacy 911 system migration strategy that is bogged down in an ongoing commitment to the past.

We'd like you to know that we're not here to ask the Commission to solve all these problems, nor do we see the Commission itself as the problem. Quite the contrary: we

applaud the Commission's recent decision to create a new emergency service provider designation in Ohio. By the Commission's own words, you have provided PSAPs with competitive alternatives to the legacy 911 services.

We are also aware of pending arbitrations before the Commission involving incumbents and Ohio's newest CESTC with whom Hamilton County has engaged to test and deploy mission-critical solutions in the coming weeks and months. These tests and deployment require interconnection and cooperation with incumbents; and it is clear to us that you are doing all you can to promptly resolve the dispute and facilitate the ability for interconnection between adjacent countywide 911 systems to ensure transferability across county lines. This will avoid any unnecessary delays that would put lives and property at risk.

Our comments are not about a single vendor or a single county's desire to advance 911. Rather, we see a broader opportunity to recognize the value of innovation and the benefits of competition. Incumbents have had bestowed upon them a public trust to innovate and provide a 911 system that goes far beyond what they've provided for the last 10 years. They have failed to fulfill that public trust. Next generation technology is here and available today, and public safety agencies want it and can afford it. The incumbents have grown complacent ... virtually disinterested. In the absence of regulatory reform, it is highly unlikely that incumbent 911 service providers will suddenly decide to invest the kinds of dollars required to catch up; nor is it likely that they'll silently sit back and allow others to take their markets away. Instead, they will do what we see them doing in Ohio: advancing outdated laws and regulations and standing on ceremony to keep competitors out and to preserve what's left of an undeserving monopoly.

This is truly a once-in-a-generation opportunity to jointly make broader policy determinations in order to facilitate a competitive, vibrant, and evolving 911 marketplace, while at the same time ensuring that the life-saving features and benefits achieved over decades are preserved in a next generation environment. Consumers expect it and deserve it.

We believe these policy matters can and should be addressed through a combination of industry self-regulation and continuing regulatory oversight of this critical service. NENA's Next Generation Partners Program is but one example of how industry is trying to get its collective arms around a multifaceted agenda on a national level. And, Ohio's own 911 Council may be an appropriate body from which to seek recommendations; however, we feel strongly that a rule making procedure undertaken by this Commission is most appropriate to address the unique issues of our evolving next generation environment. What is at stake here is addressing an order-of-magnitude change in technology and market forces that requires a commensurate change in regulation. And, what is needed here goes beyond what we understand the 911 Council's mission to be. These policy issues demand that all stakeholders, under the watchful eye of this Commission, be allowed to identify the wide array of issues facing Ohio's evolving 911 systems and to recommend what needs to be added, deleted or modified to current rules and regulations.

In addition to our desire that the Commission facilitate a competitive 911 market fueled by market demand and innovation, following are just a few examples of issues worth considering in such a rule making:

- There are innate differences between legacy TDM and IP technologies that have particular relevance in a 911 environment; and imposition of legacy regulation on IP-based providers may be unnecessary or inappropriate. For example:
 - Whether it's appropriate to allow a VoIP provider, or telecom carrier using IP networks, who are serving "static" end user customers to forego either:
 - provisioning 911 trunks in lieu of IP networks, or
 - putting ALI records in the 911 database, instead allowing them to use a so-called "nomadic VoIP dynamic ALI solution"
- It's unclear whether the industry or regulators have analyzed and determined that voice and data using packet switching is as secure, reliable, and has sufficient quality of service as TDM 911 elements such as redundant inbound and outbound selective router trunks.
- It is vital that any 911 service provider, whether it also has retail phone customers or just serves as a traffic aggregator for other providers, demonstrate that it is sufficiently qualified, technologically, financially and managerially, to provide service.
- Parity among all providers and with respect to multiple topics, including funding and interconnection rights to mention just a couple, remains an important policy goal necessary to balance the need to maintain high standards with the need to preserve a level playing field.
- To ensure meaningful competition that fuels innovation, consideration should be given to such issues as bundled tariff offerings that impose duplicated billing situations, what is an appropriate role for a 911 provider of last resort, and determination of reasonable arrangements for interconnection and wholesale pricing.

While these policy issues are being debated, the existing 911 system has been stretched well beyond its original design and intended use. In order to bridge the technology gap between the newer technologies and applications that are available today and legacy systems, new entrants need interconnection and interoperability with incumbents' 911 systems ... systems that have exhausted their capacity for expansion and change. Notwithstanding the appropriateness of a rule making that embraces a next generation 911 system for the next fifty years, there are near-term problems. Critical testing of new life-saving technologies is being delayed by Ohio's incumbent 911 service providers. These near-term problems can be solved in the coming weeks by this Commission which we believe shouldn't depend on - or wait for - the outcome of a rule-making. With incumbents obstructing, and with standards slipping, consumers are already unnecessarily at risk. It is time for government officials who are charged with ensuring

the efficacy of the 911 system to act swiftly and decisively. The lives and property of our citizens depend on it.

Thank you for your time and thoughtful consideration. We look forward to working with you on next generation 911 rules.

Attachment B

Recommended 9-1-1 Service Standards

Recommended 9-1-1 Service Standards

As Proposed By

Intrado Communications Inc.
Longmont, Colorado USA

Recommended 9-1-1 Service Standards

Introduction

Intrado Communications Inc., a wholly-owned subsidiary of Intrado Inc. ("Intrado"), shares its parent company's quarter-century legacy as the nation's premier provider of integrated data and emergency communications network solutions. Intrado has played a key role in defining, building and maintaining core emergency communications infrastructure and 9-1-1 technology throughout the United States. Intrado's services and systems support an estimated 200 million 9-1-1 calls each year including calls from wireline, wireless, Voice over Internet Protocol (VoIP) and other alternative communication technologies. Currently Intrado is deploying the Intrado® Intelligent Emergency Network™, its next generation 9-1-1 system that enables the public safety community to transcend the limitations of the nation's legacy 9-1-1 infrastructure. Intrado Communications plays a critical role for Intrado in owning and operating the regulated telecommunications infrastructure and related offerings used to support the roll out of the Intrado Intelligent Emergency Network.

Intrado is committed to maintaining the *public safety class* integrity of the nation's 9-1-1 network as demonstrated by its self-imposed operational requirements and 99.99999 percent uptime track record in support of its customers' emergency calling needs. It is further reinforced by Intrado's commitment to industry standards and compliance with regulatory requirements, several of which Intrado has championed.

Intrado and its subsidiaries maintain an in-depth knowledge of public safety, emergency communications management, and telecommunications implementation and policy. This intellectual capital provides the unique technical, financial and managerial qualifications needed for Intrado Communications to present a well-reasoned recommendation for 9-1-1 Service Standards.

As defined below, Intrado Communications believes the following recommended 9-1-1 Service Standards are the foundation for delivering reliable and redundant emergency communications services.

Professional Commitments

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|--------------------|--|
| <i>Regulatory:</i> | E9-1-1 Service Providers ("E9-1-1SPs") should obtain appropriate approvals from state and federal regulators to operate as telecommunications carriers or as a "certificated equivalent" of telecommunications carriers in this mission-critical field and should demonstrate managerial, technical and financial capabilities as may be required in the particular jurisdictions where such providers deliver 9-1-1 services. |
| <i>Financial:</i> | <p>E9-1-1SPs should maintain financial records in accordance with Generally Accepted Accounting Principles (GAAP) and, where required of such providers, maintain records in accordance with the Uniform System of Accounts (USOA).</p> <p>E9-1-1SPs should have the requisite financial resources and capacity to ensure E9-1-1 services are reliable, secure, perpetually-sustainable, uninterrupted and capable of</p> |

embracing changing technology, new calling devices and an evolving emergency communications industry.

Industry Standards: E9-1-1SPs should adhere to industry standards and industry-accepted practices related to administrative, data management and managerial processes.

System designs, interfaces and provider processes should incorporate and embrace those principles and operational recommendations defined in the NRIC (Network Reliability and Interoperability Council) Best Practices, NENA (National Emergency Number Association) Recommended Standards and ATIS/ESIF (Association of Telecommunications Industry Solutions/Emergency Services Interconnection Forum) protocols and interface standards.

System solutions should be compatible and demonstrate forward looking architectures to integrate with call relay center technology, TDD (telephone device for the deaf) and other ADA (Americans With Disabilities Act)-type applications.

Systems designs and operation should support industry standard signaling and data protocols and methods.

Call completion standards and voice quality standards should meet or exceed industry standards.

Solutions should possess compatible and operational capabilities to accommodate CALEA (Communications Assistance for Law Enforcement Act) requirements.

In connection with the utilization of any technology coupled with the use of any device from which the digits 9-1-1 can be dialed (which creates in the mind of an end user a reasonable expectation that the call will naturally terminate at the professional work station of a trained public safety call taker), the ALI associated with the call, if placed from an indoor location (wireline, "fixed wireless", etc.), should include at a minimum the caller's street address; and if placed from an outdoor location, should include the latitude and longitude, with dynamic ALI updates, of the caller's location.

Performance Monitoring: Systems should be capable of generating timed and on-demand call performance metrics.

Diversity and Resiliency Commitments

E9-1-1 system platforms should be deployed to separate geographic locations to ensure E9-1-1 service is not interrupted in the event of system failure at any one location. Transport facilities should also employ diversity principles by being connected to the E9-1-1 network over separate geographically located facility paths to minimize the potential for E9-1-1 call failure as a result of any one facility path having connectivity disrupted. Carrier diversity ensures no single point of network failure can interrupt overall 9-1-1 call processing.

Diverse routing should be provided to the extent made possible as determined by the availability of existing facility routes and estimated costs to be incurred by the respective facilities provider.

Diversity concepts should also be applied to switch port assignments, Digital Access Cross-connect Systems (DACS) devices and other points of interconnection within a switching office.

In addition, Hardware Redundancy should be a priority as the E9-1-1 system should be designed as "fault tolerant", with no single point of failure able to completely disable the overall service provided to the served communities.

System architecture should be designed with resiliency such that an individual component failure encountered during call processing does not result in a lost call or such that the loss of a major system/network element does not impair call completion capabilities. The solution should be built on a nationwide voice network that enables advanced disaster recovery options specifically designed for the public safety community. Calls should be capable of being immediately rerouted through direct connectivity, secure IP (Internet Protocol) connectivity or the PSTN (Public Switched Telephone Network) anywhere in the nation.

Call Routing and Data Accuracy

All 9-1-1 calls should be transported and routed via native public safety grade networks, terminating at the professional work station of a trained public safety call taker located at the PSAP designated by local public safety officials. Consistent with the *NENA Master Glossary of 9-1-1 Terminology*, facility and circuit provisioning should be designed such that no more than one call out of one hundred during the average busy hour to any given PSAP will encounter a busy condition (i.e. P.01 Grade of Service).

Data accuracy shall be provisioned such that the number of unresolved data errors shall not exceed .2 % of the total number of TNs in the ALI database over any given 30 day period. Further, at least 99 % of all requests for ALI received from a PSAP over any given 30 day period shall result in a retrieval of the respective caller's telephone number and accurate location information.

To ensure a PSAPs readiness to implement E9-1-1 service, the E9-1-1 service provider shall not place an E9-1-1 system into service unless the MSAG validation success rate meets or exceeds 95 % of the total number of ALI records to be processed to the affected ALI system.

9-1-1 Infrastructure Reliability and Security

An E9-1-1SP should design its system architecture such that the mean time between failures is no greater than ten (10) minutes over ten (10) years and should establish defined and reasonable restoration plans, inclusive of complex disaster and Public Safety Answering Point (PSAP) evacuation contingencies.

Systems should be designed to be protected from viruses and cyber exploits utilizing system security solutions such as firewalls, Intrusion Detection System and/or Intrusion Prevention System. etc.; employ password and protection controls to mitigate external threats and be designed to function even during a public network (internet)-based "Denial Of Service" attacks.

Environmental Safeguards

Computer rooms should be highly secured, with access limited to authorized personnel only. Environmental protections should be backed by Uninterruptible Power Supply (UPS) restoration schemes, such that the loss of commercial power will not result in the loss of emergency call processing. Back up power schemes should also ensure HVAC and lighting systems are included in all contingency and power planning.

Reporting and Alarming

System designs should enable automatic detection and reporting of any system and/or subsystem component failure.

The system should possess the ability to optionally interface call logging equipment with the call routing system to enable the retrieval of the ANI Automatic Number Identification (ANI) received from a 9-1-1 call, the identity of the call taking position answering the call and the date and time the call was answered, transferred and/or disconnected.

The system should support the ability to document the occurrence of any call including the routing logic, call processing events, and the relative timing of each call related event.

Expandability

Systems should be designed to accommodate reasonable growth requirements through future module increments. System solutions should be upgradeable without interrupting processing of established or new 9-1-1 calls.

System Compatibility

System design and operation should be capable of interoperating seamlessly with legacy TDM (time division multiple)-based networks and with legacy CPE (customer premise equipment) hardware, or at a minimum include integration/replacement of older technology.

Solutions should be extensible to accept and process emergency assistance requests from next generation voice and/or text (Instant Messaging) devices within the same architecture and prioritization rules.

Basic Core Features

- | | |
|---|--|
| <i>Automatic Number Identification (ANI):</i> | A feature by which the calling party's telephone number is forwarded to the 9-1-1 system for call routing determination and PSAP display. |
| <i>Automatic Location Identification (ALI):</i> | A feature by which the location is associated with the calling party's telephone number is forwarded to the 9-1-1 system for call routing determination and/or PSAP display. Additional telephones with the same number as the calling party's (secondary locations, off premises, etc.) will be identified with the address of the telephone number at the main location. |

Selective Routing: A feature that enables routing of a 9-1-1 call to the proper PSAP based on the geographical location of the caller.

E9-1-1 Database Management: A computer-based data management system/process used to create, store and update the call processing and display data (e.g. Emergency Service Numbers, addresses, and user names, etc.) required to provide Selective Routing and ALI Display features.

Managerial Services

Help Desk Services: An E9-1-1SP should provide 24 x 7 support for service problem reporting/tracking and emergency call trace support.

Configuration / Engineering Support: An E9-1-1SP should provide engineering and configuration support to enable efficient network and data provisioning and ongoing support.

Project Management: An E9-1-1SP should offer optional project management of pre and post deployment activities.

Traffic Management Control: An E9-1-1SP should routinely monitor call traffic overflow and utilization metrics; & adjusting network capacities when warranted.

Surveillance Support: An E9-1-1SP should provide 24 x 7 support for alarm surveillance and detection, service restoration and tier 1 and tier 2 escalation management.

9-1-1 Call Management Features

The following E9-1-1 features and capabilities (defined herein) are currently technologically feasible and are representative of minimum industry standards today. These features and capabilities, or their functional equivalents, should serve as a minimal benchmark against which future improvements should be made (e.g., 9-1-1 caller location precision). All 9-1-1 systems should possess the flexibility to accommodate all of the following features.

Alternate Routing: Systems should be designed in a manner such that 9-1-1 calls are routed to a designated alternate location if all lines to the primary PSAP are busy, or the primary PSAP is closed for a period of time. This feature should enable the ability for callers to be terminated either to a previously designated alternate call center, a prerecorded message or to a busy tone when all PSAP trunks are busy.

Default Routing: Systems should be designed such that when an incoming 9-1-1 call cannot be selectively routed due to an ANI failure, unintelligible digits or other rare causes, the call should be routed from the selective routing system to a default PSAP previously designated by the public safety customer and based on the incoming trunk group over which the ANI failure occurred.

<i>Time Scheduled Automatic Call Transfer:</i>	System designs should include the ability for a PSAP to redirect 9-1-1 call traffic to an alternate PSAP, based on previously defined day and/or time of day criteria. (Such a feature is sometimes used for night transfer functionality in smaller PSAPs.)
<i>Last Resort / Overflow Call Disposition:</i>	Each PRI (Primary Rate Interface) group should support having pre-defined call treatment for a busy condition. Call treatment alternatives should include forwarding the caller to another PRI, forwarding the caller to a PSTN number, playing a pre-recorded announcement, or returning a busy signal (120 ipm tone).
<i>Call Treatment / Forward Busy:</i>	System designs should support having pre-defined call treatment for a busy condition. Call treatment alternatives should include forwarding the caller to another PRI, forwarding the caller to a PSTN number, playing a pre-recorded announcement, or returning a busy signal (120 ipm tone).
<i>Fixed Transfer:</i>	System designs should be arranged such that the call taker may use a single button on the call taker's display and transfer unit to complete either a transfer or three-way conference.
<i>Selective Call Transfer:</i>	System designs should support the ability for a PSAP attendant to transfer an incoming 9-1-1 call to another agency by depressing a button labeled with the type of agency; e.g., "Fire," on the customer premises equipment.
<i>Star Code Transfer:</i>	The call taker should have the ability to initiate a three-way call using the flash key and a star code followed by a 10-digit telephone number. At any point the call taker may release the call to perform a transfer. The jurisdiction will be able to create speed dials for the most commonly transferred numbers.
<i>Conferencing and Local Transfer:</i>	Systems should be deployed such that the call taker may use a flash key, star code and two-digit speed dial code to complete either a transfer or three-way conference.
<i>Manual Transfer:</i>	The 9-1-1 system should be designed such that the PSAP attendant may transfer an incoming 9-1-1 call by manually obtaining dial tone through use of the telephone switch hook or the appropriate button on the customer premises equipment and dialing the appropriate telephone number or speed calling code.
<i>TDD Capable:</i>	System operations should include support for the appropriate disposition and handling of TDD-type 9-1-1 calls.
<i>Evacuation Related Call Redirection:</i>	System design should allow for a quick redirection of calls using a make busy feature. The circuits should be placed into a busy status, forcing calls to the pre-defined call forward busy treatment destination.
<i>Wireless Call Processing</i>	Systems should be designed such that Wireless Connectivity allows for the delivery of a wireless 9-1-1 call through the 9-1-1 network to a PSAP. Carriers providing wireless and set ANI, cell site and sector and/or longitudinal and latitudinal (x/y) coordinates in the appropriate format, may connect directly to the 9-1-1 system. The

9-1-1 system will forward information to the PSAP as well as provide Selective Routing functions.

*Private Switch ALI
(PSALI) Support:*

Systems should support PSALI operation. PSALI is a service offering which allows a Multi-Line Telecommunication Service (MLTS) or Private Branch Exchange (PBX) switch to send ANI information to the 9-1-1 selective Routing system from individual stations for the purpose of providing site or station location information upon calling 9-1-1, or for selectively routing such calls to the appropriate PSAP.

PSALI should also be available to Centrex customers who wish to provide the 9-1-1 system provider with more specific location and routing information. (A PSALI customer may be, for example, a municipality or other state or local governmental unit, an authorized agent of one or more municipalities or other state or local governmental units, a MLTS or PBX owner/operator, or a Centrex customer.)

*Nomadic Voice
over Internet
Protocol (VoIP)
Support:*

Systems should be designed such that nomadic VoIP connectivity allows for the delivery of a VoIP 9-1-1 call through the 9-1-1 network to a PSAP. VoIP Service Providers having the capability to provide nomadic user handset ANI, service address and/or longitudinal and latitudinal (x/y) coordinates in the appropriate format, should be able to connect directly to the 9-1-1 system whereupon the 9-1-1 system should forward information to the PSAP as well as provide Selective Routing functions.

Document Description

This document represents Intrado's core beliefs relative to minimum recommended 9-1-1 service standards that any Enhanced 9-1-1 Service Provider should be capable of meeting.

Disclaimer

Every effort was made to ensure that the information in this document was complete and accurate at the time of publication. However, information is subject to change, and Intrado makes no representations or warranties as to the accuracy of the information or its suitability for any intended purpose.

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