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INTELLIGENT COMMUNICATIONS

Emergency Services Overview

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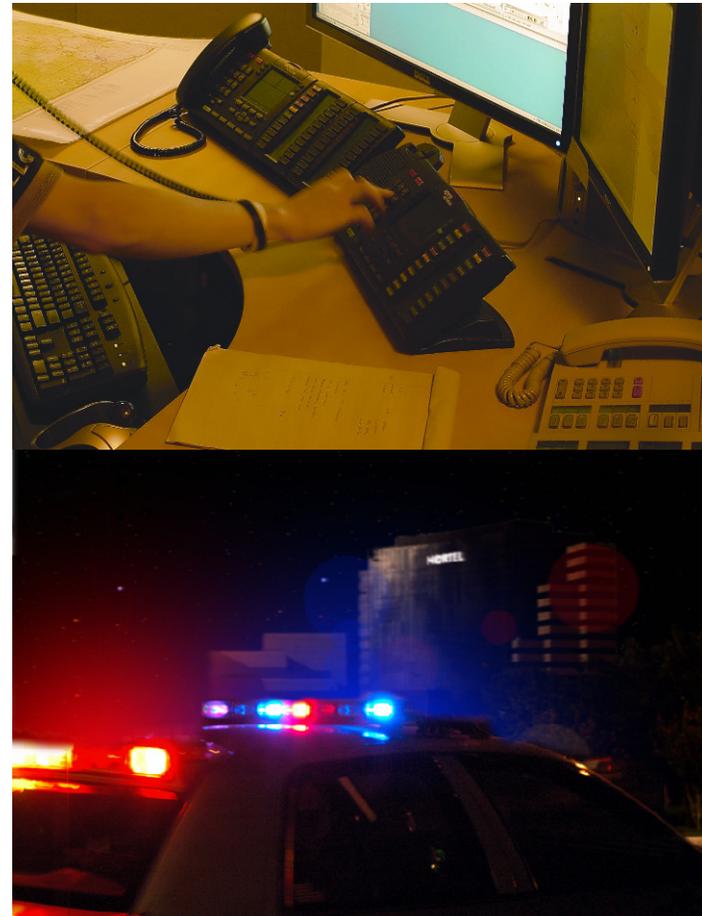
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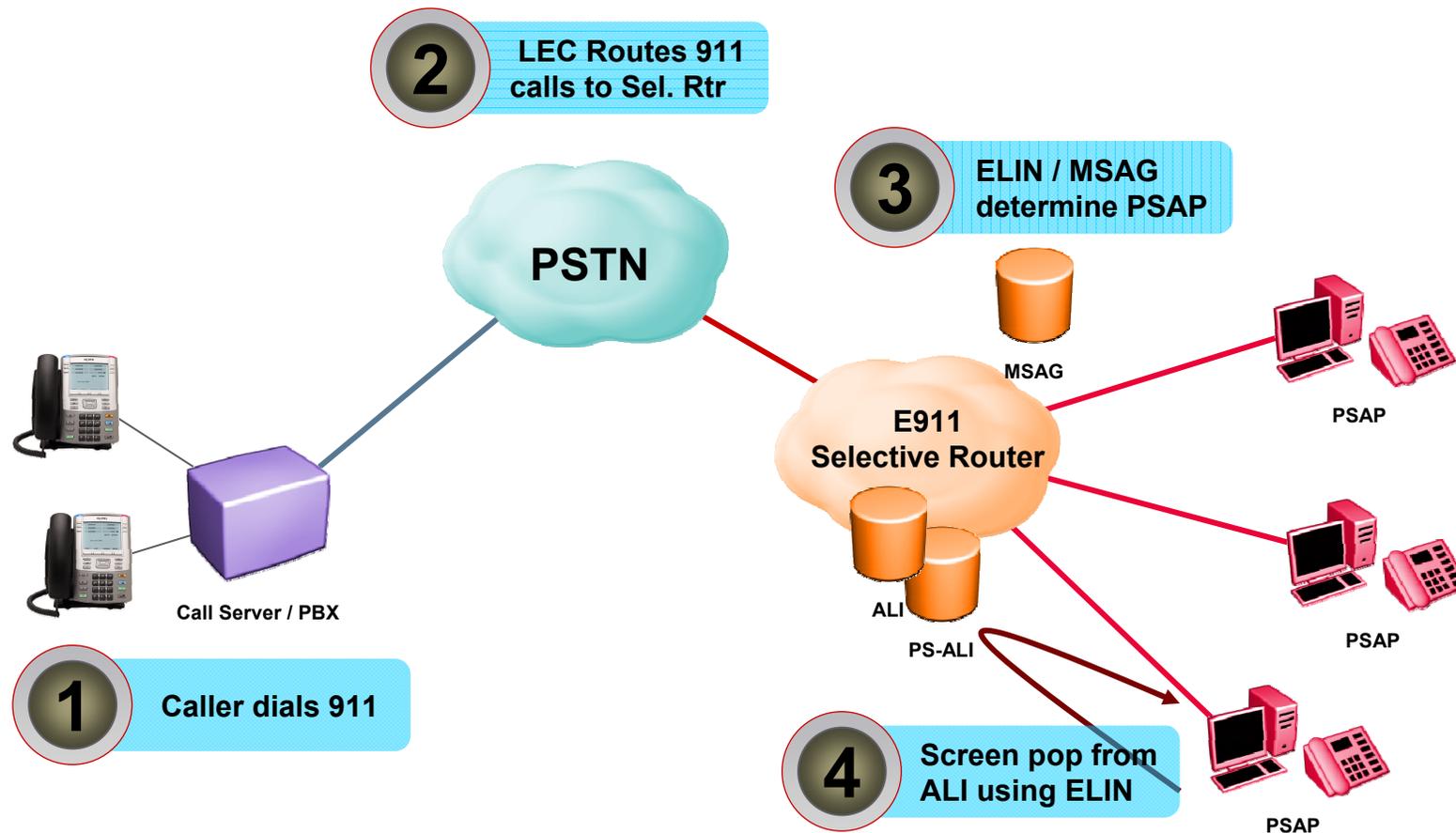
Emergency Services

A critical piece of MLTS deployment – But often forgotten

- ▶ Emergency dialing from Multi Line Telephone Systems is a critical piece of today's communications infrastructure.
- ▶ Customers assume this has been done because they can 'dial 9-1-1'
- ▶ Often inadequate or **inaccurate** information is sent to the local Public Safety Answer Point (PSAP)
- ▶ Avaya takes E911 seriously, and has developed an affordable, industry leading, feature set that provides the flexibility of mobility, while maintaining employee safety



How E911 Works – It's just Caller ID



What the PSAP Operator Sees

```
C1-66          ESN=250          006
(972) 684-1000 07:18          10/13/08
2221          N
LAKESIDE

                684-1000 PBX
RICHARDSON          TX

AVAYA
ALT#=          TELCO=VzB
X=0.0000000000000000
Y=0.0000000000000000

RICHARDSON POLICE
RICHARDSON FIRE
RICHARDSON EMS
```

What Emergency Responders See



WHERE IS THE 9-1-1 CALLER?

A maze of problems? Not for today's technology

- ▶ Front door addresses are not sufficient
- ▶ Visitors may not be able to describe their physical location
- ▶ Multi-Story buildings and multi-building campus environments can significantly delay and confuse emergency response
- ▶ VoIP further complicates E911 location due to the nomadic mobility of the devices
- ▶ Remote teleworkers are becoming more common as well as the corporate “drop-in cube”
- ▶ All of this can be addressed in the Call Server with minimal adjunct equipment



Accurate Caller Location is CRITICAL

Some Facts and History

- ▶ No federal MLTS E9-1-1 requirement
- ▶ MLTS 9-1-1 requirements first raised at the FCC in 1994 in Docket 94-102
- ▶ NENA/APCO 2001 Model Legislation
- ▶ FCC declined to regulate MLTS systems in 2003 Report & Order (FCC 03-290), deferring to state action but promising to monitor state inactivity and reexamine issue if states do not act

The main causes of E911 failures in MLTS

- ▶ Sending of the Main Billing Number
 - Not enough Information
 - Difficult to locate the caller
- ▶ Sending The Wrong Number
 - Bad Information
 - “No one here called 9-1-1 “
- ▶ Sending Outdated Information
 - Irrelevant Information
 - Combination of both of the above

Technology Advances Make E911 Easy

- ▶ PRI circuits are now common – Expensive CAMA trunks are no longer required
- ▶ SIP Trunking is growing rapidly providing the ability to send Caller ID even from the smallest enterprise
- ▶ MLTS Systems now address specific location based Caller ID with each call
- ▶ Common technology all phone types



2006 Tragedy in Maryland

The screenshot shows the Washington Post website interface from April 21, 2006. The main article is titled "Man Found Dead in Office 10 Hours After 911 Phone Glitch Confuses Rescuers" by Ernesto Londoño. The article describes how a 39-year-old sales representative, Kaafee Billah, called 911 for medical help, but the call was routed to the wrong address due to a phone glitch. The article is accompanied by a "TOOLBOX" with options for Resize, Print, and E-mail, and a "COMMENT" section that is closed. To the right, there is a Bank of America advertisement and a "TOP JOBS" section with links to various job categories.

<http://www.washingtonpost.com/wp-dyn/content/article/2006/04/20/AR2006042001923.html>

- ▶ A glitch in the phone – or lack of E911 planning?
- ▶ A few simple steps may have saved a life

Local Termination – What is the law?

The screenshot shows the front page of The New York Times website. At the top, there are navigation links for 'HOME PAGE', 'TODAY'S PAPER', 'VIDEO', 'MOST POPULAR', and 'TIMES TOPICS'. The main header features the 'The New York Times' logo, the 'U.S.' section, and a search bar. Below the header is a horizontal menu with categories like 'WORLD', 'U.S.', 'N.Y. / REGION', 'BUSINESS', 'TECHNOLOGY', 'SCIENCE', 'HEALTH', 'SPORTS', 'OPINION', 'ARTS', 'STYLE', 'TRAVEL', 'JOBS', 'REAL ESTATE', and 'AUTOS'. The main article is titled 'Lawmakers Say Chemical Company Withheld Information About Explosion' by Matthew L. Wald, published on April 21, 2009. The article text begins with 'WASHINGTON — When a huge explosion occurred last August at a West Virginia chemical plant, managers refused for several hours to tell emergency responders the nature of the blast or the toxic chemical it released, and they later misused a law intended to keep information from terrorists to try to stop federal investigators from learning what had happened, members of a House subcommittee said Tuesday.' To the right of the article is a sidebar with social media sharing options (Facebook, Twitter, Recommend, Sign in to e-mail, Print, Reprints, Share) and a promotional banner for 'Great Getaways - Travel Deals by E-Mail' and 'Dive into SUMMER MOVIES 2010'.

<http://www.nytimes.com/2009/04/22/us/22chemical.html>

- ▶ The public called from 20 miles away from the plant
- ▶ No one at the plant dialed 911? Did they block the calls?

MLTS E9-1-1: Perceived Roadblocks

- ▶ Excessive cost and complication **FALSE**
- ▶ Outboard solutions generally \$25,000 - \$50,000 **FALSE**
- ▶ Required both capital and ongoing operational costs **FALSE**
- ▶ States have been reluctant to legislate MLTS requirements due to financial burden of solutions

Manufacturers have addressed the cost issue

- ▶ Business are now much more likely to act since economical solutions have become available
- ▶ Many still require a legislative ‘nudge’
- ▶ NENA Model Legislation published February 2009
- ▶ Virginia laws modified based on industry input
- ▶ Massachusetts legislation was based on the NENA model

MLTS E9-1-1: Concerns

- ▶ Ability of MLTS systems to send accurate caller and location information to the Public Safety Answering Point (PSAP)
- ▶ 9-1-1 dialing without dialing an access code
- ▶ PSAP should receive a valid callback number
- ▶ On-site security personnel should be notified when a 9-1-1 call has occurred
- ▶ Fully restricted telephones should be able to dial 9-1-1
- ▶ On Site Notification and Local Termination Requirements

Manufacturer Embedded Technology

Common Emergency Services for both TDM and IP devices

Enhanced routing of emergency calls based on location

Built In / Cost effective 'zone based' approach where appropriate

On Site Notification providing detailed location of emergency callers

Precise station level reporting where required

Misdialed Emergency Call Prevention to reduce false 9-1-1 calls

Dynamic callback mapping allows callback directly to stations calling 911

Support for remote teleworkers and Virtual Office

Support for multiple emergency numbers

Prevention of service changes to phones that have made emergency calls

With the bulk of Enhanced Emergency Services capabilities being software and configuration driven, these are included as a core feature of the Avaya CS 1000 and Avaya CM at NO ADDITIONAL CHARGE

Enhancing E911 with PS-ALI

- ▶ Private Switch ALI (PS-ALI) provides enhanced location support for E911 by using station or zone specific Caller ID.
- ▶ The PSAP can then use the specific ANI to query the E9-1-1 Automatic Location Identification (ALI) database for a display of the callers location.
- ▶ PS-ALI is a generic term that includes:
 - Agreements which specify the telephone numbers and locations served by the PBX which will be maintained by the PBX Administrator
 - Network provisioning to ensure the Calling Party Number not the Billing Telephone Number is delivered as ANI on 911 call
 - PBX provisioning to ensure 9-1-1 calls route out the appropriate trunks and send the correct ANI
- ▶ PS-ALI Management is provided by
 - 3rd party Software or services used to format the ALI record
 - Secure interface access to the E911 ALI database to maintain the ALI records

What the PSAP Operator Sees with PS-ALI

```
C1-66          ESN=250      006
(972) 362-1745 07:18      10/13/08
2221          N
LAKESIDE

                362-1745 PBX
RICHARDSON      TX
BLDG 1 FL 10 LAB 7
AVAYA
ALT#=          TELCO=VzB
X=0.0000000000000000
Y=0.0000000000000000

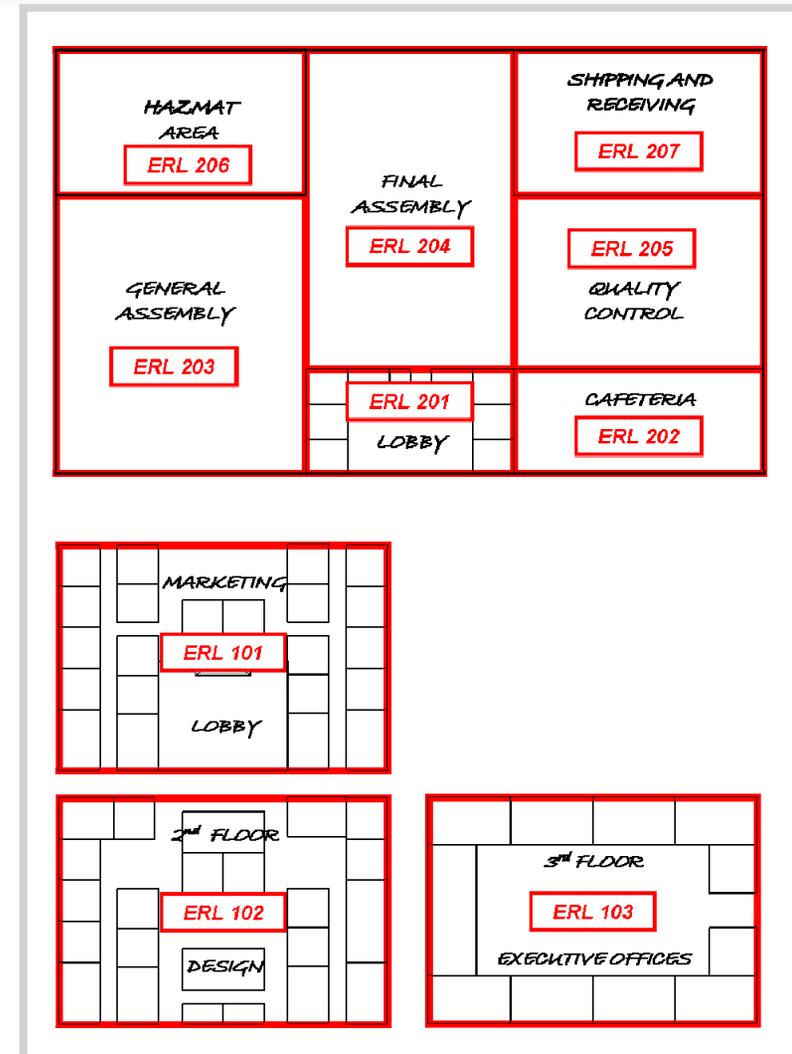
RICHARDSON POLICE
RICHARDSON FIRE
RICHARDSON EMS
```

Some Quick Facts about PS-ALI

- ▶ Must be coordinated with the LEC
- ▶ Typically incurs a 'set-up fee'
- ▶ May incur monthly recurring fees
- ▶ Depending on the complexity of the user, adjunct software may be required to continuously manage the PS-ALI data base at the station level
- ▶ Zone level PS-ALI is more manageable from a customer perspective, and provides reasonable accuracy

ERLs are the key to Affordable E911

- ▶ Emergency Response Locations consolidate users into geographic groups with common E911 properties
- ▶ Each ERL has a caller ID assigned to it called an Emergency Location Identification Number (ELIN)
- ▶ Each ELIN has an entry in the public PS-ALI database
- ▶ That information is provisioned ONCE and remains static
- ▶ Overhead and ongoing maintenance of user location (in PS-ALI) is eliminated



Emergency Response Locations

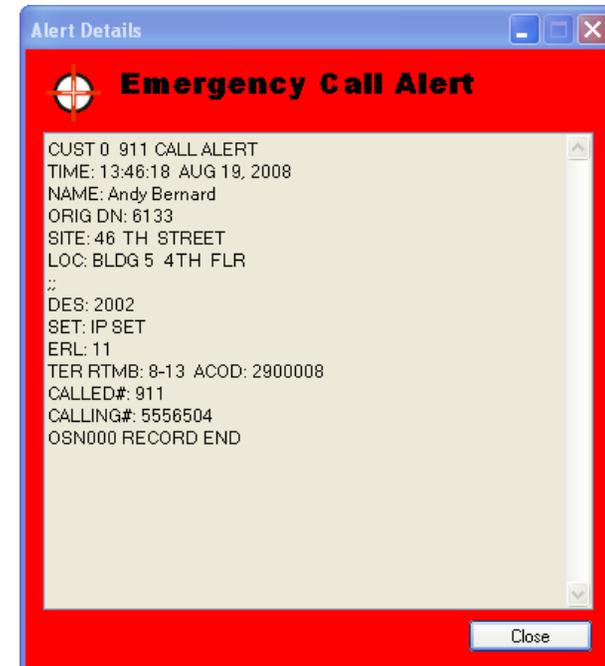
Implementing at the right level



- ▶ NENA model legislation recommends that ‘fire alarm zones’ are excellent starting points for ERL or Zone based E911 where station level is not mandated or required.
- ▶ Square footage by itself is not a sufficient determination factor; also consider:
 - Telephone station density
 - Population density
 - Ease of access
 - Visibility of the area (dense office or open space)
 - Use of the area
 - Storage of hazmat materials requiring special response

On Site Notification

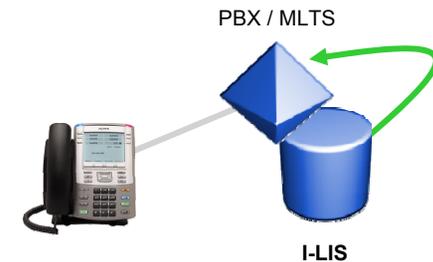
- ▶ Provides exact station level reporting
- ▶ Allows local first responders to be notified as soon as an E911 call occurs
- ▶ Provides a “Central Response Point” for Public Safety to respond to for more detailed information
- ▶ Notification mechanisms include:
 - Screen Pop
 - Email / SMS



Discovery Manager Solutions for VoIP

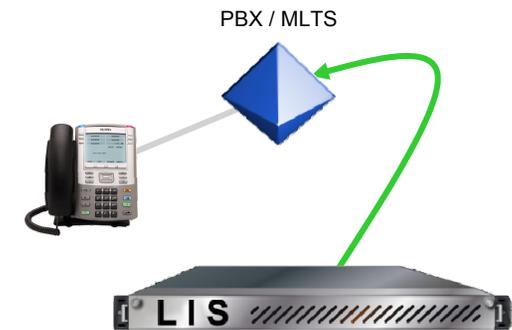
▶ Internal Location Information Server

- On board solution
- No external server required
- Affordable solution for subnet level zones



▶ External Location Information Server (3rd party)

- Avaya employs industry standard protocols and interfaces to integrate with the most popular external discovery managers
- Supports discovery of IP telephones regardless of data network manufacturer's hardware without using proprietary mechanisms
- Solutions are available for all levels of granularity
- New solutions coming to market that are below \$5000 total investment



E911 Capabilities at minimal expense

- ▶ **Ability to dial 911 with and without and access code**
- ▶ **On Site Notification**
- ▶ **Priority Call Handling**
- ▶ **Support for Zone based routing and CLID**
- ▶ **Local Termination**
- ▶ **Misdial Prevention**



INTELLIGENT COMMUNICATIONS

thank you

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