



E9-1-1 Location Accuracy

July 19, 2007

The Past

❖ The 1990s Changes 911 History

✓ FCC Docket 94-102

- Established Call Routing; Phase I; Phase II Loc. Accuracy
 - Network Solutions @ 100 meters/ 67% calls; 300 meters/95% calls
 - Handset Solutions @ 50 meters/67% ; 150 meters/95% calls
- Cost Recovery
- OET Bulletin 71 – April 2000 – Guidance on Compliance Reporting

✓ State Policy On Wireless 9-1-1

- Established Cost Recovery; Deployment Planning; Government Board/Commissions

❖ Congress

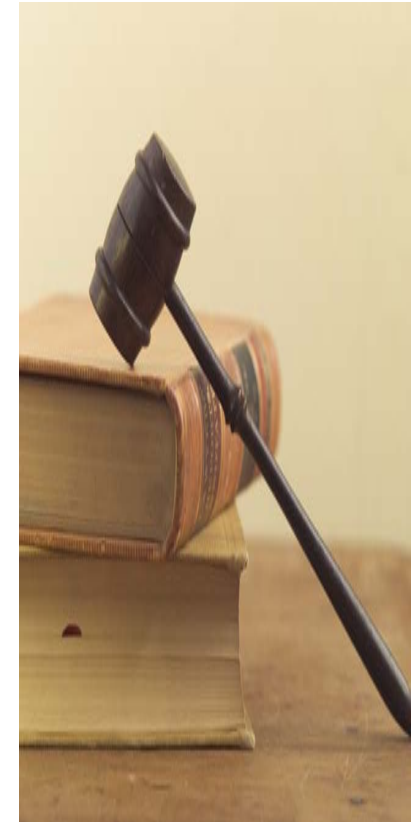
- Liability

❖ 2000more to come

✓ NRIC VII Focus Group 1A (2004)

- APCO Petitions FCC On Accuracy Compliance @ PSAP Level
- http://www.locatemodelcities.org/documents/LOCATE_Final_Report.pdf

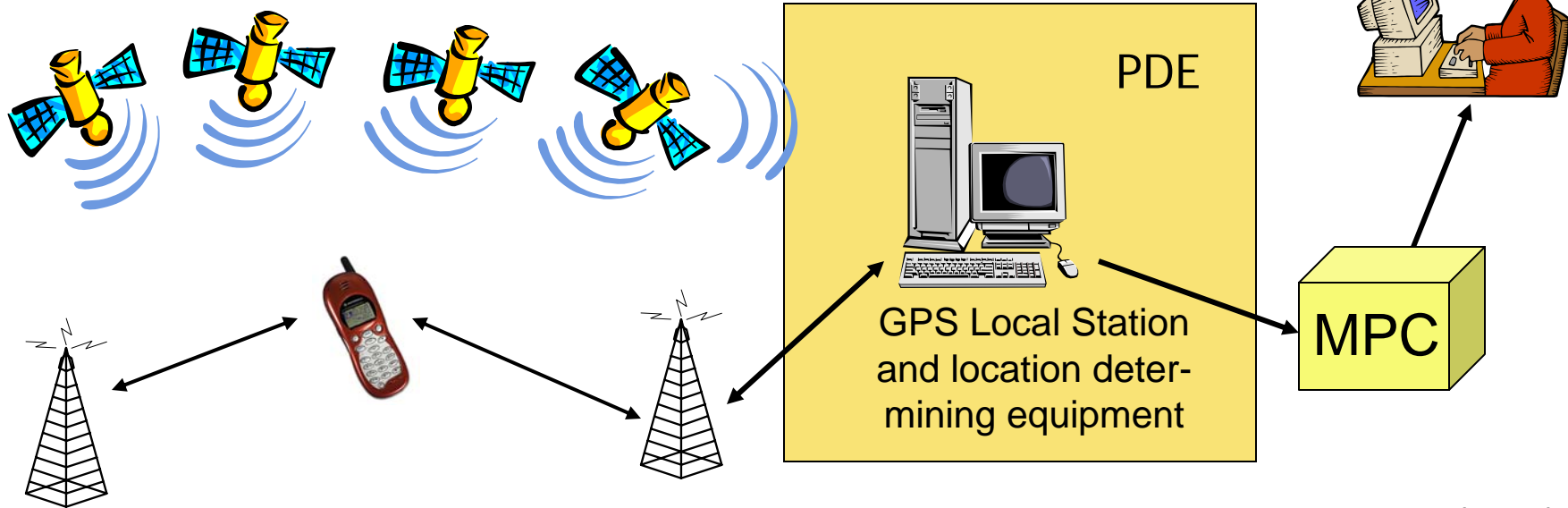
❖ FCC Docket 05-196 – VoIP 911/ Auto Location (2005)



Wireless 9-1-1 Phase II Assisted-GPS Handset Based Solution

A-GPS: Assisted Global Positioning System

Minimum of four satellite signals required. Three for position, fourth to resolve time measurement errors.



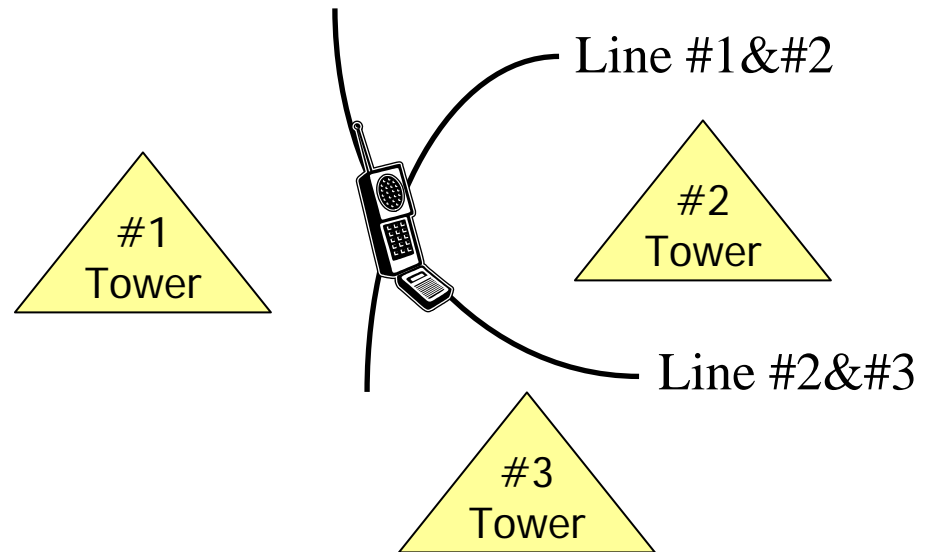
The handset is located based on Information from Global Positioning Satellites and sent to Positioning Determining Equipment

The Positioning Determining Equipment (PDE) calculates location and forwards Latitude and Longitude to the Mobile Positioning Center (MPC) and thus to PSAP.

Wireless 9-1-1 Phase II AOA & TDOA Network-Based Solutions

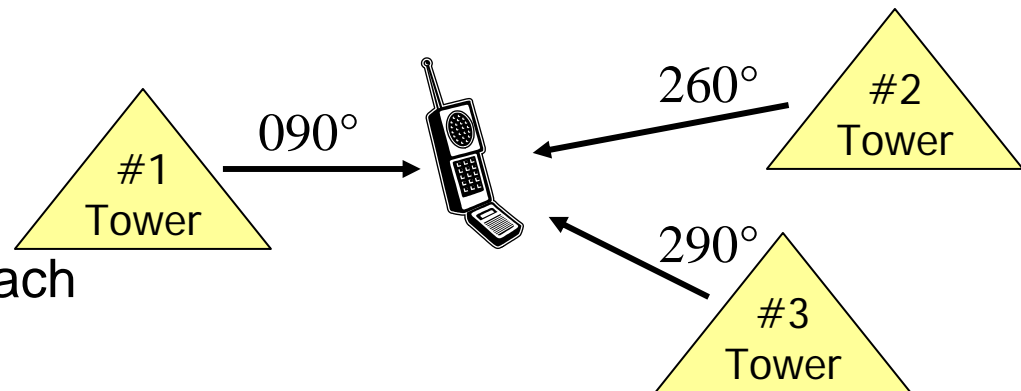
Time Difference of Arrival

The mobile is located based on triangulation using the time difference to receive information from the mobile by at least three cell sites.



Angle of Arrival

Calculate position based on the angle at which the cell phone's radio signal reach at least three towers.



The Present

❖ State Policy

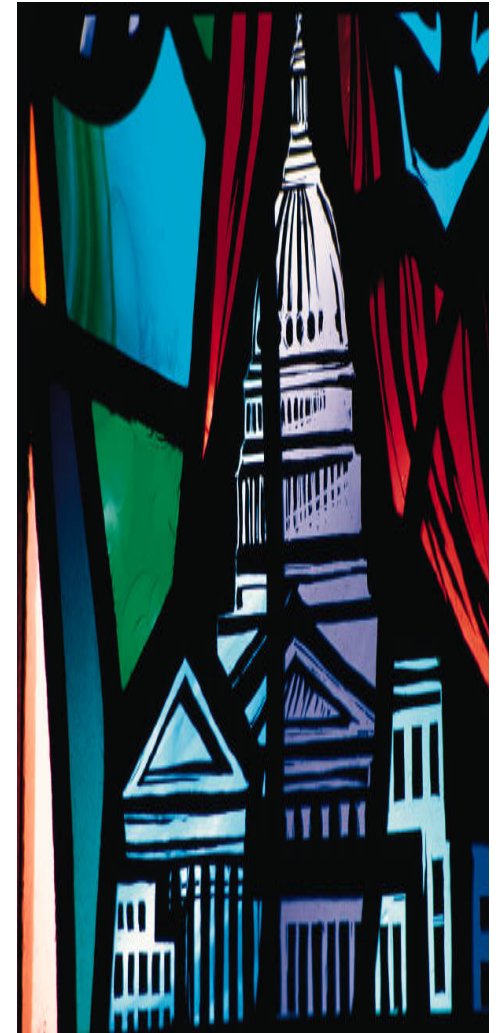
- ✓ Board Authority
- ✓ Funding
- ✓ Next Generation

❖ Congress

- ✓ VoIP

❖ FCC - Notice For Proposed Rule Making (May 31, 2007)

- ✓ PS Docket No. 07-114
 - CC Docket No. 94-102
 - WC Docket No. 05-196



FCC PS Docket 07-114 NPRM

❖ A. Geographic Area Required For Wireless Phase II Location Accuracy Compliance

- ✓ Tentatively concludes Phase II accuracy PSAP level
 - “Our goal is to provide meaningful automatic location identification that permits first responders to render aid, regardless of the technology or platform deployed”
- ❖ Seeks comment on APCO petition & expedited consideration: & should the FCC defer enforcement ?
- ❖ Comment Period: 14 days after Federal Register Publication – July 5, 2007
- ❖ Reply Comments: 21 days after Federal Register – July 11, 2007

FCC PS Docket 07-114 NPRM

❖ B. Other Wireless & VoIP Accuracy Issues

✓ Deferred Enforcement

- Tasks For Compliance? Times Vary? Factors Considered?

❖ Single Location Accuracy Standard . . . "much as changed since the commission established the current requirements"

- ✓ How To ensure PSAPS receive as accurate as possible information?
- ✓ "Tentatively conclude public would be better served by a single accuracy requirement" . . . Comments?

❖ Location Technologies "We Seek To Develop A Full Understanding of the Capabilities and Limitations of Existing LDT."

- ✓ Comment on various LDTs? Do Some Perform Better? Factors Influencing? Short Term/Long Term Improvements? Hybrid Combinations? Better Accuracy? Require this? PSAP Experience?

FCC PS Docket 07-114 NPRM (B. Other Issues Continued)

- ❖ Accuracy Standard “What Should The Standard Be”?
 - ✓ Include Elevation? Uniform Standard? Date? Other Measures Need to Improve
- ❖ Compliance Timeframes “assuming we adopt a uniform requirement”
 - ✓ Appropriate Date? Actions Needed on systems that cannot meet the requirements?

FCC PS Docket 07-114 NPRM (B. Other Issues Continued)

❖ Compliance Testing . . . "Methodology to verify to compliance"

- ✓ OET Bulletin 71? Indoor / Outdoor Use? Mix of equipment? Test Points Within PSAP Area? Distributed? Special Considerations For Rural?
- ✓ Should OET 71 be made mandatory? Included in Rules?

❖ Schedule for Testing . . . "establish a schedule for testing and seek comment"

- ✓ Every two years? Different Schedule? File With Commission or other organization? Treat Information Confidential? Different Topologies?

FCC PS Docket 07-114 NPRM (B. Other Issues Continued)

- ❖ Accuracy Data . . . "Carriers Should Provide Data To PSAP"
 - ✓ How? Format? How Often? Part of ALI? Level of granularity of data?
- ❖ 911 Calls Placed When Roaming . . . "concerned about roaming calls and issues"
 - ✓ Require location on every call even in roaming? Ubiquitous Location? Mandate a particular technology?

FCC PS Docket 07-114 NPRM (B. Other Issues Continued)

❖ Interconnected VoIP Services . . . “comment on VoIP Services & Required Auto ALI”

- ✓ Subject to same LDT accuracy requirements as CMRS?
- ✓ Conclude that providers must provide automatic location that meets same accuracy standards that apply to CMRS services.
- ✓ Input on all issues and update the VoIP Proceeding with new information or arguments?

❖ Commission Reports (ASAP)

- ✓ FCC methods for carriers to improve in-building location accuracy;
- ✓ Use of Hybrid Solutions to increase accuracy and address shortcomings of current technologies

FCC PS Docket 07-114 NPRM (B. Other Issues Continued)

❖ Section B Schedule:

✓ Comments:

- 60 days after publication in Federal Register –
August 20, 2007

❖ Reply Comments

- ✓ 90 days after publication in Federal Register –
September 19, 2007

The Future

- ❖ Emergency Communications Is Complex But.....
We Can't Afford Silo Policy;
- ❖ Policy Models That Can Sustain The Test of Time
- ❖ Policy Needs To Consider All The Stakeholders





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CONTACT US:

Office: 202.292.4603

Website: www.e911institute.org

Email: contactus@e911institute.org