



Text-to-911 Update 911 Patent Reform Data

February 11th, 2016

Making Connections that Matter[®]

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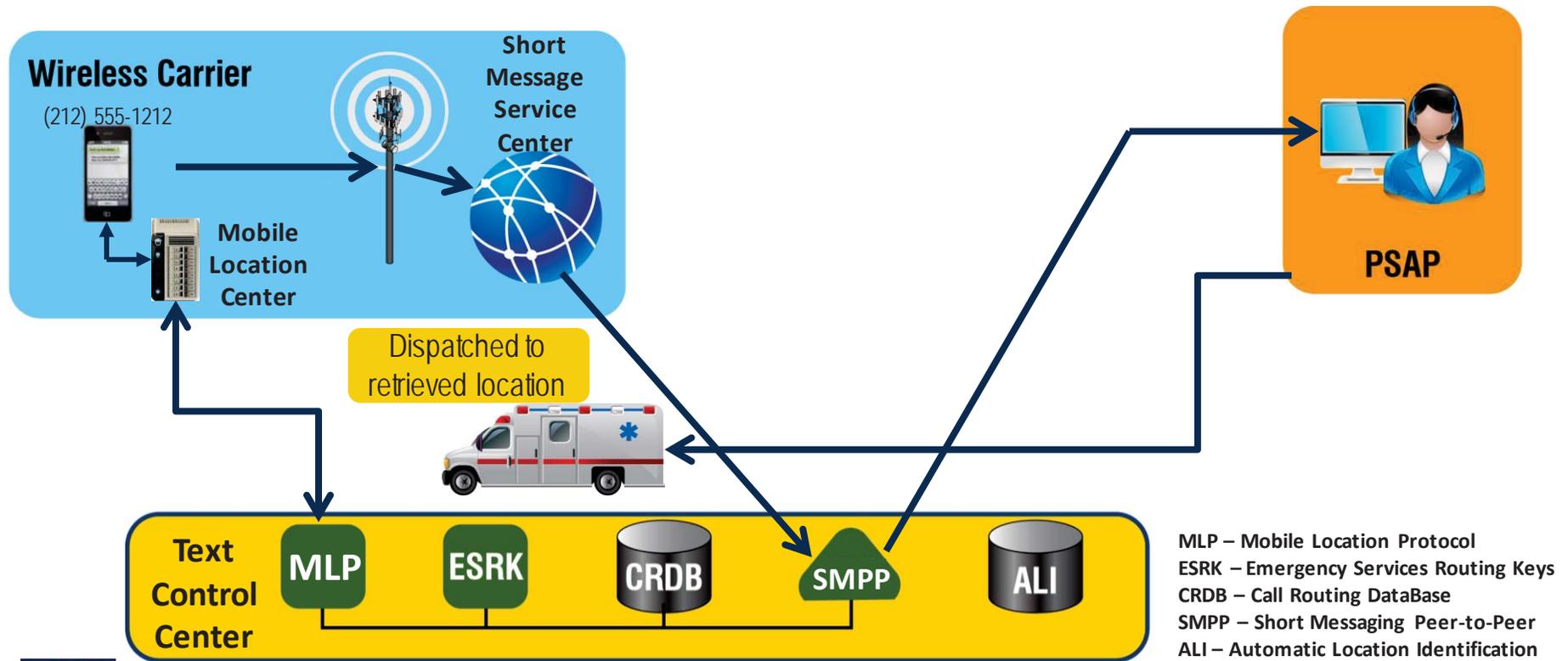
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Agenda

- SMS-to-911 Deployment Status
- Text-to-911 Baseline Scenario
- Text-to-911 with Enhanced Location
- Text-to-911 While Roaming
- Text-to-911 Transport Options
- Patent Reform Status

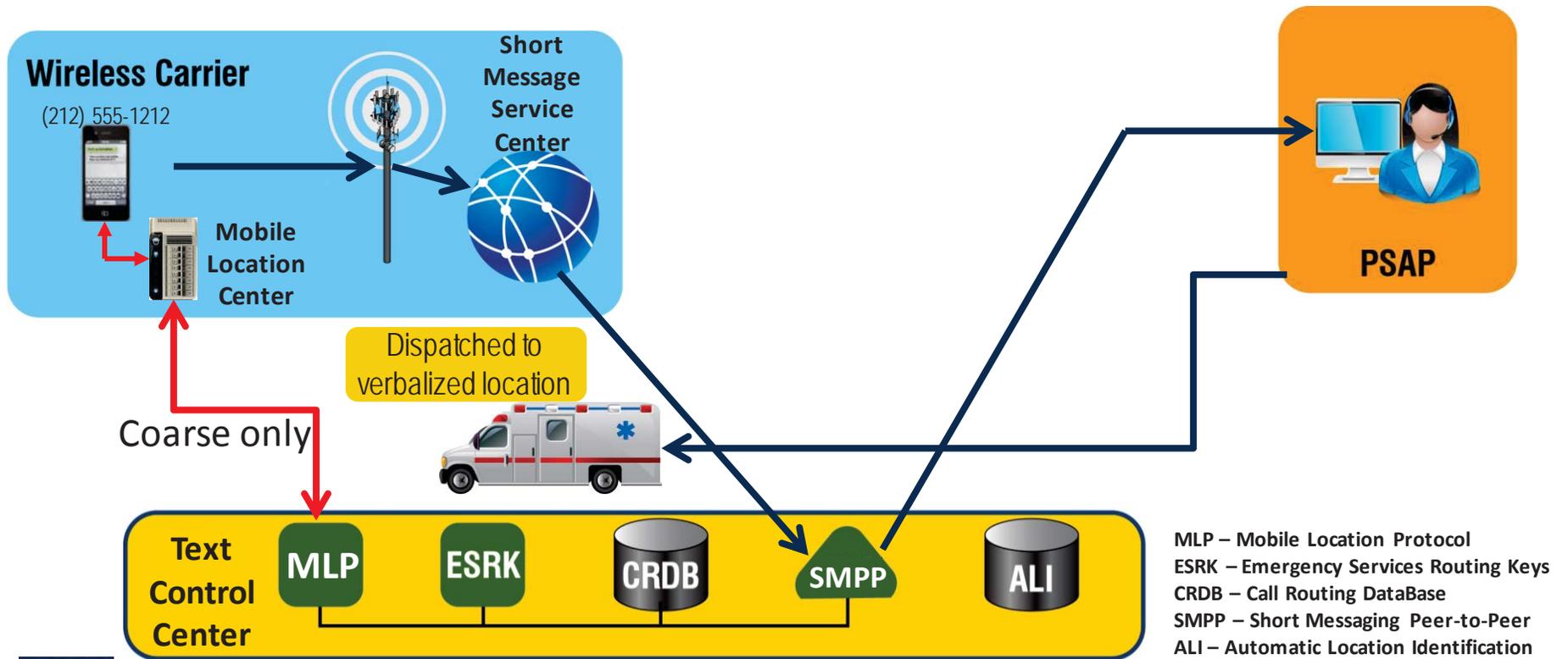
Wireless Text-to-911 Baseline

- 1: Person texts 9-1-1
- 2: SMSC forwards message to TCC
- 3: TCC retrieves location of texter
- 4: TCC delivers to nearest PSAP
- 5: PSAP interacts with texter
- 6: PSAP dispatches emergency assistance



Text-to-911 Enhanced Location Challenge

- 1: Person texts 9-1-1
- 2: SMSC forwards message to TCC
- 3: TCC only gets coarse location of texter
- 4: TCC delivers to “nearest” PSAP
- 5: PSAP gets enhanced location from texter
- 6: PSAP dispatches emergency assistance



Enhanced Location Requires Handset Changes

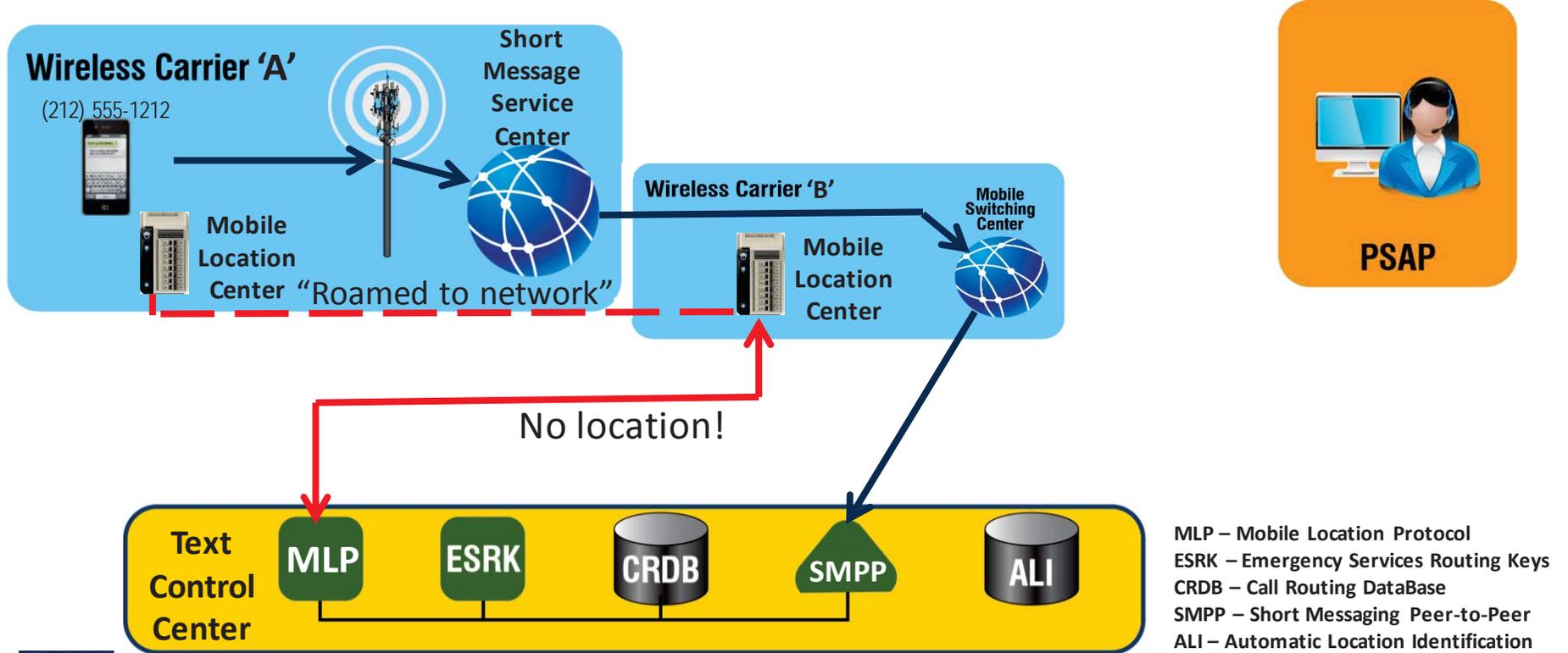
Network Initiated Location

- Defined in standards
 - Secure User Plane Location (SUPL) version 2.0
 - In standards but not deployed in all handsets
 - Can be provided as a thin client on the handset
 - Example: Verizon Family Locator
 - Example: Sprint Workforce Locator
- Indoor Location (NEAD) needs similar interface
 - NEAD must interrogate handset to get detected WiFi info
 - Interrogation process could get enhanced location from handset
 - Same non-spoofable methods can be employed

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Text-to-911 Roaming Challenge

- 1: Person texts 9-1-1 from 'A'
- 2: SMSC forwards message to SMSC 'B'
- 3: 'B' SMSC forwards message to TCC
- 4: TCC requests location – no location info!
- 5: TCC sends bounceback message



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Location Roaming Requires Network/Handset Changes

Interconnected Network Location

- Network approach discussed in standards
 - Competing approaches – no final decision
 - MLC-to-MLC interfaces defined
 - MLC in Network 'B' can interrogate MLC in Network 'A' ("home MLC interrogates "roamed to" MLC)
 - Hub-and-Spoke Location ecosystem considered
 - All MLCs interface to a Global MLC manager – does not require a meshed network
- Handset-based approach could be considered
 - NEAD must interrogate handset to get detected WiFi info
 - Interrogation process could get enhanced location from handset
 - Same non-spoofable methods can be employed

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Transport Options – Standards Update

- MSRP vs. RTT vs. MMES
- Standards update

911 Patent Status

- Continue to work on amendment to Senate PATENT Act
- TCS has seen approximately \$7.5M in outside costs
 - Associated with only four patent cases so far
 - Does not include internal costs
- NG911 will increase exposure by at least 3x – probably more

Questions

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