Advancements in Wireless Location Accuracy

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9-1-1 Location vs Commercial Location

- Traditional 9-1-1 Location Methodology
  - Blindfold On – Only measure what phone can see at time of 9-1-1 call
  - Measurements made at time of 9-1-1 Call
    - GPS measurements
    - BLE beacons
    - WiFi access point
  - Uses NEAD to provide address
  - User can not opt out
  - Location can not be spoofed
- Commercial Location Methodology
  - Blindfold Off – Phone can make location measurements before 9-1-1 call
  - Phone has better understanding of where it is when 9-1-1 placed
  - Can provide more accurate location than tradition 9-1-1 location alone
  - Can be verified by 9-1-1 location to eliminate issues with spoofing
  - Uses NEAD to provide address
  - User can opt out

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Carrier controlled Handset assisted location

- Carrier controlled / installed handset based software
- Eventually tightly coupled with handset operating system
- Follows commercial location opt in / out privacy model
- Users can help improve their own location information to 9-1-1
- Can help build NEAD database
- 9-1-1 will always have as good or better locations than commercial apps

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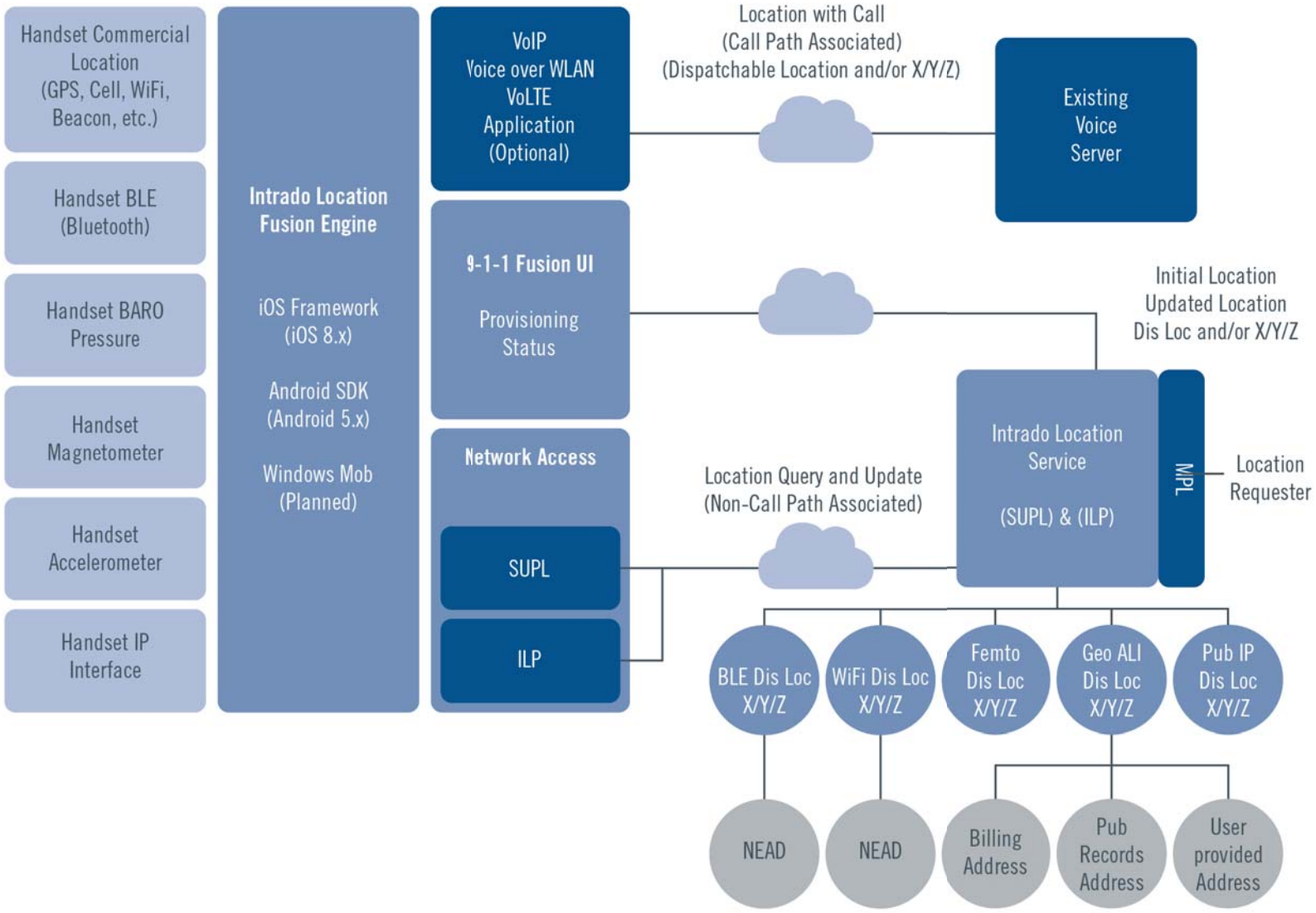
Intrado Location Fusion Framework



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PSAP use of Dispatchable Location

- Cell site addresses cause confusion and should no longer be sent to PSAP
- Addresses delivered to PSAPs should only be dispatchable locations
- Different types of addresses define different response procedures for PSAP
  - Wireline residential address
  - Wireline enterprise address
  - Wireline MLTS
  - Payphone (if any still exist)
  - Private Femtocell, private WiFi, Private BLE
  - Public Femtocell, Public WiFi, Public BLE
  - Associated Address
- PSAPs must be able to understand relevance of different types of addresses
- Class of Service (COS) has traditionally been used to define different addresses
- Civic Address and X/Y can convey the same information as MSAG address

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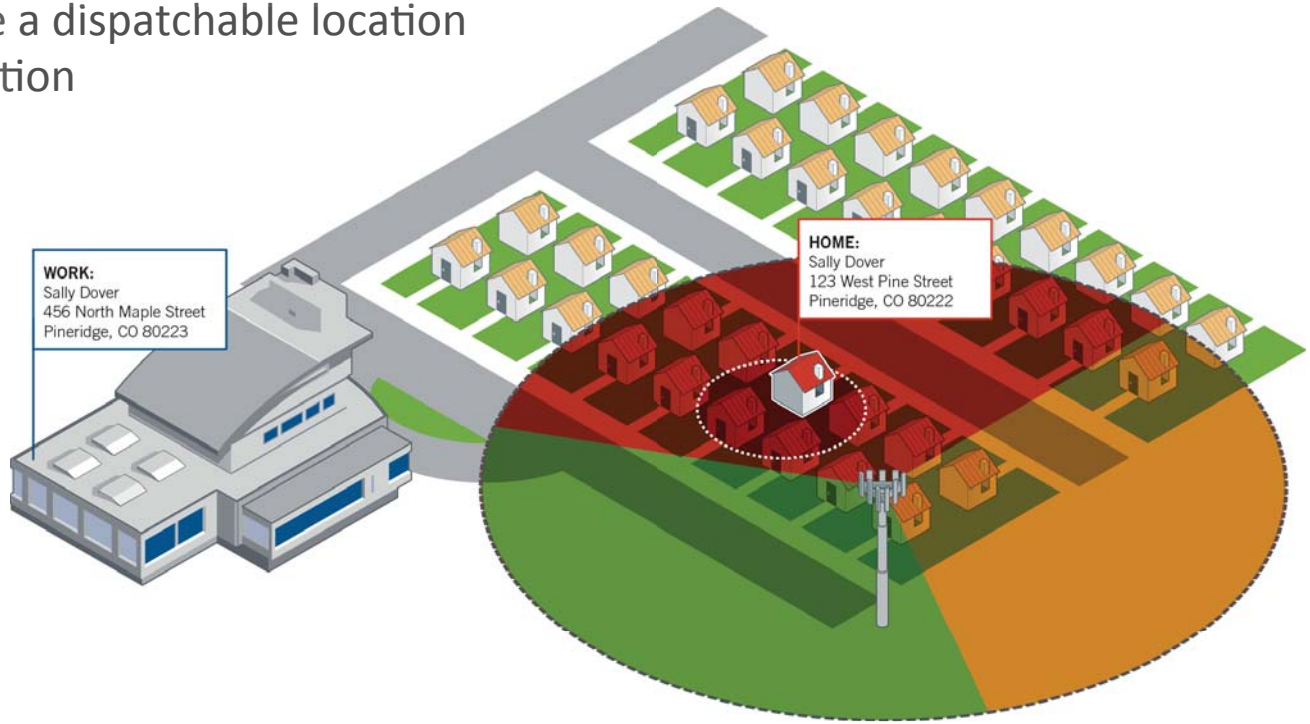
Associated Address - Geo-Relevant Wireless ALI

- Only provide dispatchable location associated with the emergency caller
- Nearby associated address are EXTREMELY valuable to public safety
- Multiple possible data sources : billing address, user-provided address, public data
- Works with existing 9-1-1 systems
- Easily implemented as a "standards based" solution
- Initial studies indicate 15-30 of all wireless 9-1-1 calls may provide a dispatchable location through this solution



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