

Enhanced Caller Location for Emergency Calls

ComReg experience and perspective

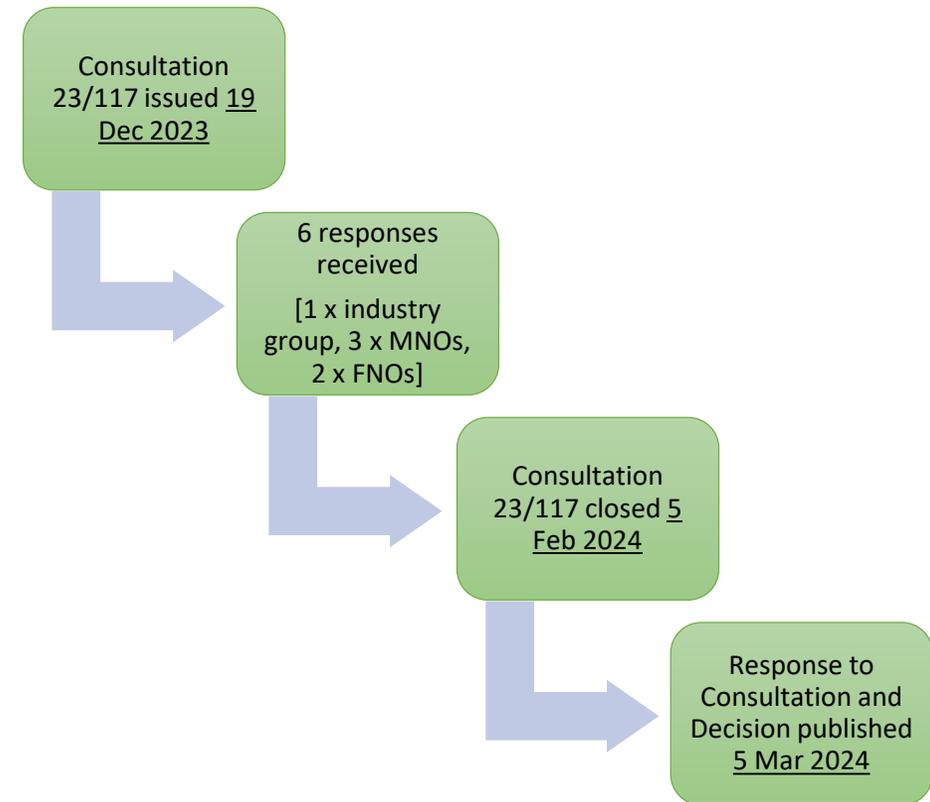


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Background – legal context & consultation

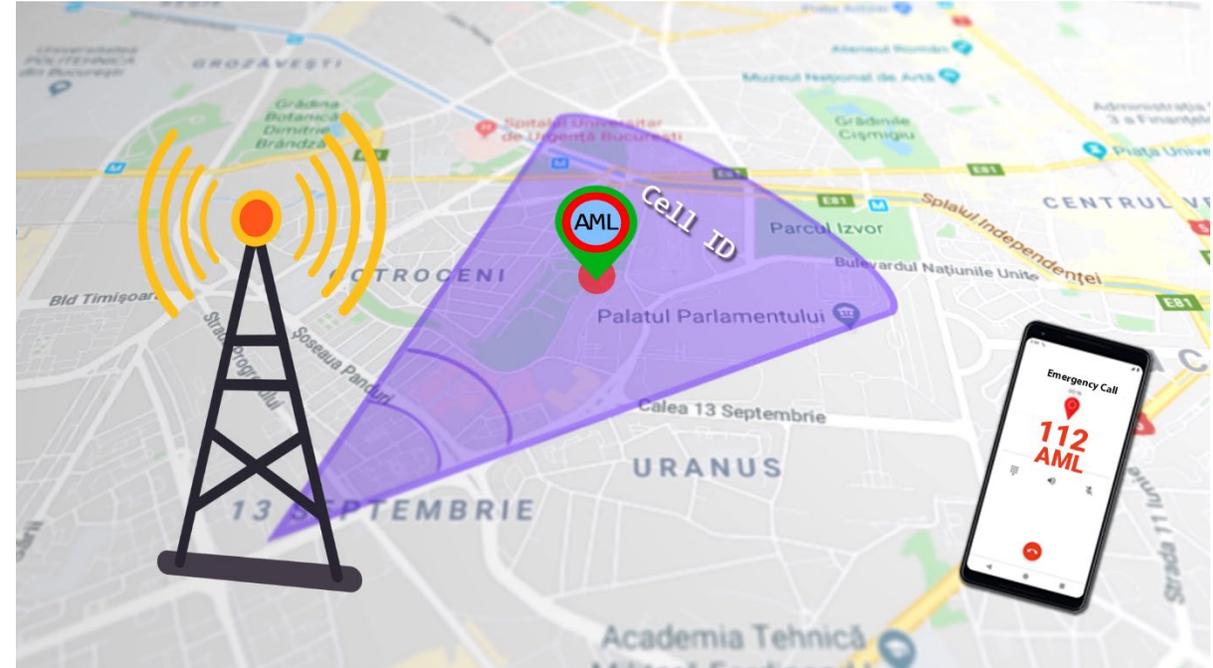
- Regulation 93(7)(d) of the Irish code (EECC) regulations and Commission delegated regulation 2023/444 require member states to lay down criteria for accuracy and reliability of caller location information for emergency calls
- Reliability
 - Percentage of calls to ECAS where caller location meets accuracy criteria
- Accuracy
 - Fixed line requirement: Fixed line address
 - Mobile requirement: Search area expressed in metres
- EENA Recommendation
 - 50m accuracy for 80% of emergency calls



Network Derived Mobile Caller Location: Cell ID



- Cell ID is provided with every mobile call
- Available from call commencement
- PSAP determines a mobile caller's (very approximate) location by looking up Cell ID against database
- Database periodically updated by mobile operators, providing mobile network topology data
- Accuracy is poor, particularly in rural areas

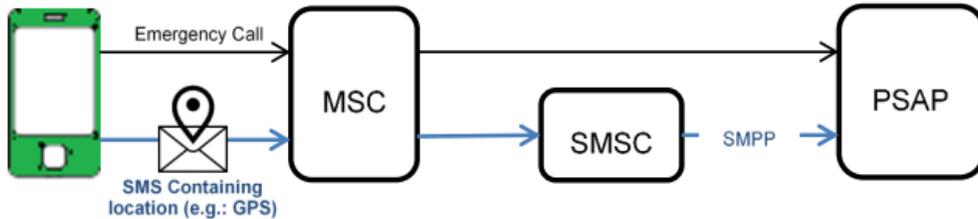


Device Derived Mobile Caller Location: About

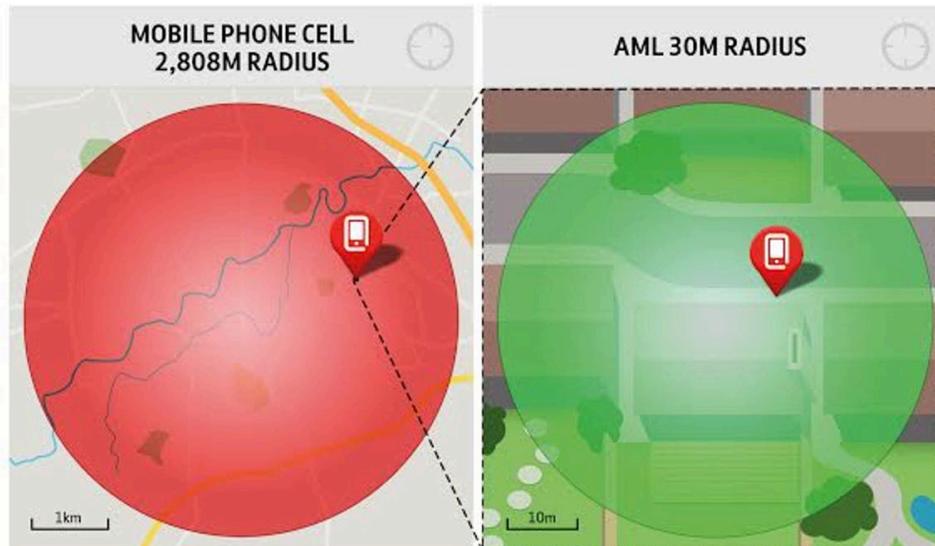
- Smartphones contain capability to ascertain location from GNSS sources (GPS, Galileo)
 - Standard limitations apply – Time to fix location, line of sight to several satellites etc
- Device derived location via GNSS is less accurate than one might expect
 - Supplemented by proprietary solutions using other data sources e.g. WiFi hotspot location.
 - Apple iOS: Hybridized Emergency Location (“HELO”)
 - Google Android: Fused Location Provider (“FLP”)
- When a device provides its location to PSAP, an indication of location source (GNSS Vs WiFi) is included



Device Derived Mobile Caller Location: AML



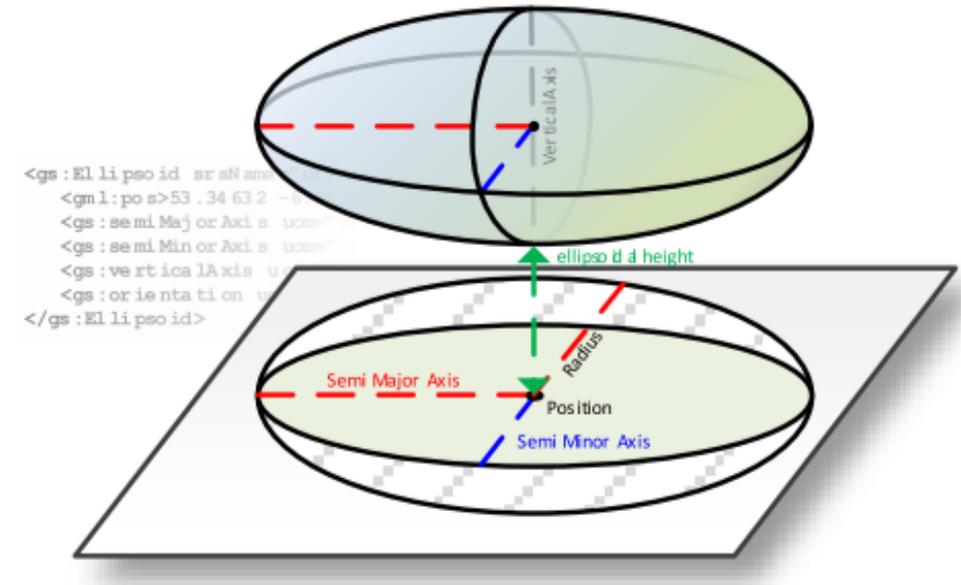
AML (Advanced Mobile Location) suburban location developed by BT, EE and HTC



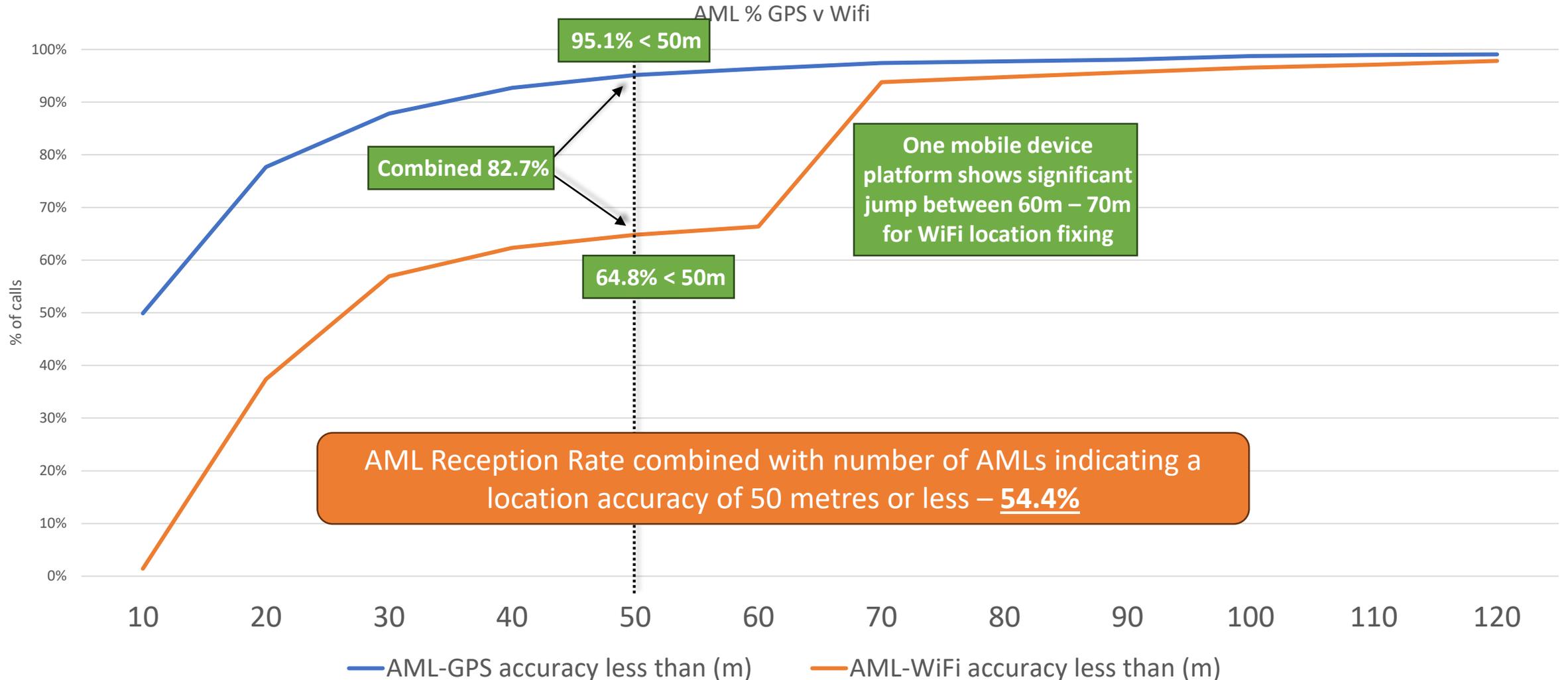
- Device derived location far superior to network derived location.
- Location expressed as a circle in which the device has confidence it is located
- Information sent to PSAP in a silent SMS, sent without caller's knowledge or involvement, several seconds after call commencement
- Requires a modern smartphone
- Reliability of AML delivery is a challenge, currently provided for ~60%-65% of mobile calls
- Saving lives in Ireland since 2017

Device Derived Mobile Caller Location: PIDF-LO

- PIDF-LO is the next step beyond AML
- Same data as AML but:
 - Contains enhanced location data including height/altitude
 - Carried in the call setup signalling for 4G VoLTE emergency calls, so no reliability issues anticipated
 - Capable of expressing location in multiple, flexible formats
 - Preferred format for location conveyance on Apple devices
- Expected to come with VoLTE emergency calling



Device Derived Location: Accuracy (2022)



Consultation's conclusions

Fixed Line Operators

- Must update PSAP address database monthly, for each fixed line number with
 - Eircode
 - Address Coordinates
 - Installation address
- In the order of preference listed

Mobile Operators

- Must continue to send Cell ID with each call, and update PSAP Cell ID database regularly
- For AML and PIDF-LO, must
 - Ensure their network is capable of carrying
 - Take all steps to support device in sending
 - Deliver to PSAP when sent by device
- ... Where technically feasible
- Must ensure a minimum reliability level of 54.5% of calls to have less than 50m accuracy, with a target of 80% anticipated from the cumulative effect of the measures adopted, changes in handset profiles and ongoing network upgrades



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