

Personal takeaways from Wednesday

1. The legacy system needs to be replaced, for many reasons (dispatcher shortage and stress, lack of efficiency and situation awareness, sometimes nobody to alert dispatchers)
2. Many opportunities for AI advancements within NG911. Some themes common (information models and formats, semantics), some themes new (extensible EIDOs, emerging patterns that justify alerting, 911 system resiliency against threats and overloads, smart and targeted notifications, efficient use of spatial data and spatial behaviors/capacities, analysis of audio of calls for background sounds (e.g. gunshots) as well as speech)
3. But many risks outside our control (federal level recognition, leadership and funding, differences across states)
4. Opportunity to cross-pollinate with other infrastructures (e.g., wildfires, weather, flooding)
5. Need to test new approaches: LLMs, reinforcement learning, etc. We showed that even simple models are promising. But need to balance accuracy/latency
6. Must be smart about data, as social media data hardly available
7. Must be smart about what we predict: when to alert and whom (by roles, by spatial location), and how to package the info, rather than what event will happen. Real goal is to reduce acuity/severity of incidents, rather than prevent
8. Must be smart about notifications, and be proactive, interactive, transparent
9. Partner with cell phone providers (to estimate capacities, traffic, deviant behaviors)

10. What is the “cost model” of alerts? How we “price” false positives, false negatives.

Who will be the messenger, who are the reputable agents and be trusted

11. What are the pathways towards better NG911 compliance, at the state (local) level; how to cost them, how to do “interoperability experiments”

Caleb: How we propagate NG911 - need to discuss

Leah + Brian: how we price our progress towards NG911. \$10-13B in 2018 dollars was OMB estimate, but fizzled to field technologies (14.85Bn out of action revenues, which is competitive) need to ensure equal access to the same quality of 911 service. Nat Assoc of counties is supportive. Funding will be going through NTIA, they set rules, establish applic process. This is an important national effort to move everyone to NG911.

Fabricio: need to generate use cases in support of this funding; how we fund AI (based on feasibility studies) should be a part of it. NSF may need to connect with some agency to fund this. The total amount is not too significant, in the grant scheme.

Kim: getting more value using existing channels, e.g. with images, there should be some low hanging fruit - automating some routine tasks. Figure out capacities, via proxies (looking nat asset characteristics) and risks based on history of threats.

Don: funding is complex, because different parts of the system are funded through local, county, state, federal sources. Perhaps through surcharges. Perhaps a research pub, or a white paper from the workshop. Need to include community safety and security. Develop scalable tools, 3D models, at scale, as low hanging fruit. Perhaps have a working group to figure out this tools.

Also, if NSF endorses NG911 - that would add scientific weight to lobbying. Need to be careful about wording (Brian refers to “911 professionals” - this is a good way to promote specific semantic that underscore the value of the career path/profession).

Brian: What’s the minimum amount of data to put into EIDO, what is the core data (value, timestamp, location)

Jon: two issues: can we detect threats, and 2) how we generate notification

Rob: real-time alerting; but 911 professionals will have to pay attention to yet another info stream

Tim: schools receive more threats than ever before. Schools are impacted by more events than you might traditionally think. Schools are used as infrastructure for disaster response

Kim: How do we include successes in the model, not just failures.

Soumik: indoor camera to detect shooters - but how to communicate and to whom? “911 Fusion Center”, beyond a call center: what data framework and info flow would support it? Several NSF programs would be interested - but need to bring communities.

Saarth: explore partnerships to get relevant data

Subhasis: not many mobile apps for 911. Some apps are specifically for school safety. Might have an app that packages all info from cell phone as EIDO.

Thursday Plan

- 3 thematic sessions and a summary session
- Notification technologies
 - Whom to notify, when, how, what level of certainty is required?
 - What technologies exist?
 - Concerns (e.g. notifying parents...)
- Other critical infrastructures
 - What are they
 - How to better cross-pollinate
 - Implications of integrations
- Partnerships
 - What partners do we need, do we have partnership gaps?

- How to get funded?
- Partnerships within industry, within government