Help by Any Means: Sociotechnical Protocols for Multimedia Requests for Assistance to Next-Generation 911 Services

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Community-Identified Problems

- Citizens often don't know when or how to request help using multimodal communications, e.g., text-to-911.

- Outside early adopters, many of the 5000+ U.S. PSAPs don't know how they will efficiently process/integrate multimodal with voice communications.

- These needs are observed by our community partner, early adopter PSAPs in Charleston County, South Carolina and communities surrounding the Dallas-Fort Worth Metroplex.

Research Questions

1. How can 911 dispatchers efficiently process and integrate multichannel text, image, and video data to support situational awareness among first responders?

2. How should we design intelligent interfaces to facilitate help 911 dispatchers process and integrate multichannel, multimodal data?

3. What are the information needs of citizens communicating multimedia requests for assistance to 911 during emergencies?

4. How should we redesign PSAs to help citizens communicate multimedia requests for assistance during emergencies?

Activities to Date

- Virtual meetings/interviews with community partners to identify needs of i) citizens requesting help using alternative, multimodal 911 channels and ii) PSAPs processing/integrating multimodal requests for assistance.

- Conduct content analysis of public education information/PSAs understand existing protocols for requesting help via multimodal 911 channels (e.g., text-to-911).

- Design/conduct scenario-based study to evaluate PSAs with citizen audiences.

- Create a preliminary framework for protocols and intelligent interfaces to share with partner organizations for review.

Intellectual Merit & Broader Impacts

Prior work has characterized information that will support "situational awareness" during a crisis but has not explored the sociotechnical processes necessary to provide situational awareness to first responders. This work will increase understanding of the social and technical implications and requirements of text-to-911 and social media-to-911 services, as viewed by a range of key players in the transition to Next-Generation 911 infrastructures. Ultimately, this research will contribute approaches to strengthening smart communities by transforming information about current challenges and threats into new possibilities to help citizens in need.

The broader goal of this work is to design sociotechnical protocols and systems that will coordinate emergency response in the 21st Century. The end goal is an intelligent information infrastructure that transfers critical information from requester, to call taker, on to emergency dispatch, first responders, and sometimes, back to the requester. Current systems do this through voice phone calls that are noted as texts, in practice, public information campaigns have been espoused as a mechanism for community capacity building, which is essential for planning, prevention, and recovery efforts to be successful. Best practices for creating protocols for will be circulated among practitioners, researchers, and other constituents interested in the development of a map-based infrastructure of social media information.