



POLICY MEMORANDUM 2024-17

SUBJECT: Modernizing DC's Emergency Communications: AI-CAD Integration Framework

ARTIFICIAL INTELLIGENCE-ENABLED COMPUTER-AIDED DISPATCH

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Shooting at Howard Homecoming

(motivating example)

AlertDC, DC's official emergency alert system, did not report this incident!



Howard University Homecoming Weekend 2024

2 women, man shot blocks away from Howard University

by Khalida Volou | Sun, October 20th 2024 at 8:51 AM

Updated Sun, October 20th 2024 at 10:31 PM

ABC News [1]

Students shaken by triple shooting near Howard University as school celebrates homecoming

By David Kaplan | Updated October 21, 2024 9:58am EDT | News | FOX 5 DC | ➔

Fox News [2]



Alert Details

<<Alert list

Subject: Crime Alert 6th District (PSA 601 to 608)
Date: 10/20/2024 11:42 PM
Details: Alert: ARMED CARJACKING Investigation AT BENNING RD SE & B ST SE. Lookout for 8 SUSPECTS ARMED WITH GUNS DRIVING A BLACK SCOOTER WITH A MISSING LEFT SIDE MIRROR, VA TAG J67306. DO NOT TAKE ACTION CALL 911 W/ EVENT # I20240548234
Reviewer: 5912

trainingtrack.hsema.dc.gov/NRss/RssFeed/AlertDetails/59979

Calendar Apps | Microsoft 365 Canvas BisonHub OneDrive ROB 101 001 FA 2024 Logician Strengths a... HPS Summer 2022 ~... Howard Links CEA_Engagement of...

Alert Details

<<Alert list

Subject: Crime Alert 1st District (PSA 101-108)
Date: 10/21/2024 2:16 AM
Details: Alert: These are investigating an armed robbery in the Unit block of Parker Row SW. Lookout for (3-4) black males all armed with guns. One Suspect in gray hoodie armed with a long shotgun in a silver car. 1st District (PSA 101-108) Alert DC Sent by MPD Cad # 3725 Reviewer: 5912

Alert Details

<<Alert list

Subject: Crime Alert 6th District (PSA 601 to 608)
Date: 10/21/2024 2:52 AM
Details: Alert: ROBBERY Investigation in the 4000 block of MINNESOTA AVE NE. LOOKOUT FOR B/M LIGHT COMPLEXION 21YO 5'9 SLIM BUILD W/ DO NOT TAKE ACTION CALL 911 W/ EVENT # I20240548435 Sent to 6th District (PSA 601-608) Alert DC Sent by MPD Cad # 5269 Reviewer:5912

trainingtrack.hsema.dc.gov/NRss/RssFeed/AlertDetails/59981

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Alert Details

<<Alert list

Subject: Crime Alert 7th District (PSA 701-708)
Date: 10/21/2024 3:29 AM
Details: Alert: Armed Robbery Investigation in the unit block of Florida Ave, NE. Lookout for 4 black males, wearing blue hospital mask, black clothing, all armed with guns, and last seen traveling in a silver car. 2500 block of Marion Barry Avenue, SE. Lookout for 4-5 males, armed with handguns in a blue 2008 Toyota Camry with Maryland tags. DO NOT TAKE ACTION CALL 911 W/ EVENT # I20240548500 Sent to 7th District (PSA 701-708) Alert DC Sent by MPD Cad # 12186 Reviewed by: 5912

Alert Details

<<Alert list

Subject: Crime Alert 5th District (PSA 501-508)
Date: 10/21/2024 3:29 AM
Details: Alert: Armed Robbery Investigation in the unit block of Florida Ave, NE. Lookout for 4 black males, wearing blue hospital mask, black clothing, all armed with guns, and last seen traveling in a silver car. 2500 block of Marion Barry Avenue, SE. Lookout for 4-5 males, armed with handguns in a blue 2008 Toyota Camry with Maryland tags. DO NOT TAKE ACTION CALL 911 W/ EVENT # I20240548500 Sent to 5th District (PSA 501-508) Alert DC Sent by MPD Cad # 13246 Reviewer: 5912

trainingtrack.hsema.dc.gov/NRss/RssFeed/AlertDetails/59983

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Alert Details

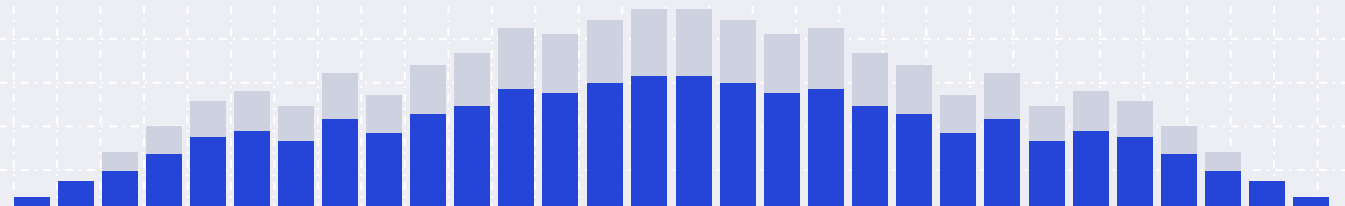
<<Alert list

Subject: Road Closures / Utility Repairs: Rock Creek Church Road, NW
Date: 10/21/2024 9:48 AM
Details: DC Water reports the 800 block of Rock Creek Church Road, NW, between Georgia Avenue and Spring Road, NW, is closed for 6-8 hours due to utility repairs. Please

No Alerts about Homecoming Shooting before articles came after reviewing their records



The purpose of this policy is to **Transform DC's Public Safety Communications** in order to:

- Fortify emergency alert infrastructure through AI integration
 - Eliminate information disparities across communities
 - Standardize incident reporting protocols
 - Enable real-time thorough multilingual emergency communications
 - Ensure constitutional compliance in public safety information dissemination
- 



Notifying Students About This Shooting in Real-Time?

01

AlertDC (relaunched in 2014)

- ❖ Users choose types of alerts to be send as SMS to their phones
- ❖ **Limited in detail**, and the 'newsworthiness' of an incident can be biased

02

DC MPD's CrimeCard System

- ❖ Provides geographical and categorical crime data **up to the previous day**
- ❖ Significant **limitations in detail and context**

03

Incident Page Network (IPN)

- ❖ IPN dispatchers monitor radio traffic to send more than **600 real-time radio messages**
- ❖ Messages are limited to "newsworthy police, fire and rescue incidents" across **United States, Canada, and Australia**
- ❖ Not openly accessible, since users must pay to subscribe





Notifying Students About This Shooting in Real-Time?



AlertDC on X

I want to explore [all violent crimes with a gun](#) over the past [1 week near me](#) within [1000 feet](#)

Please Note: Crime data will only include data up to midnight from the previous day

Offense	Location	Dates and Times
 Assault w/Dangerous Weapon (weapon: gun) CCN:24162614	2200 - 2399 Block of 8th Street NW ANC: 1E Ward: 1 PSA: 305 District: 3	Reported: 10/20/24, 5:13 AM Occurred: 10/20/24, 1:52 AM

CrimeCard for recent Howard shooting



Notifying Students About This Shooting in Real-Time?

System	Real-Time	Comprehensive	Cost
AlertDC	Yes; allegedly	No	Free
CrimeCard	No; data is up to the previous day	Yes	Free
IPN	Yes; as the incident occurs	Yes; but 600 message is low for three countries	No; must pay to subscribe



Root Causes?

01

Opaque Information Dissemination Framework

The troubling absence of standardized protocols governing the selection and distribution of public safety alerts cause **decisions to largely contingent upon subjective assessments** of "newsworthiness" or individual authorized discretion

02

Limited Personnel

With hundreds of incidents occurring every day, we can **no longer rely on solely human competence** to assess and analyze all these developments.

03

Unconscious Biases and Cognitive Shortcuts

Human bias **puts locals at risk**. As documented in behavioral science research, dispatchers, especially when consistently overwhelmed with incidents, likely introduce bias when **choosing 'newsworthy' incidents** to alert DC residents about





Recommendations

We propose a multi-stage system utilizing A.I., with various possible degrees of automation.

1) Voice Transcription



2) Multi-Modal Summarization



3) Hypothesis-Driven Classification (DNN)

- **n** Convert police and fire department radio traffic to text

- Fine-tuned generative A.I.
- Images and text can be used to more accurately summarize information
- Will utilize nationwide transition toward multimedia-enabled 911 services

1. Generating the hypothesis or classification
2. Judging plausibility for both possible outcomes with the use of explainability metrics
3. If relevant, incorporate feedback on the evidence presented to influence the final decision



Option #1: Fully Autonomous System

A.I system has **full control** over flagging incidents and altering residents, in real-time, promptly after the incident is confirmed by first-responders.

Pros:

- Can greatly reduce the workload of dispatcher personnel allowing them to focus on other tasks

Cons:

- Great emphasis will need to be placed on explainability and validated fairness of the system
- Further research need to concretely validate thresholds of explainability and fairness to resolve liability concerns

Benefits of implementing such a system may not outweigh the costs

DNN Hypothesis-Driven Framework

1. Generate the hypothesis or classification
2. Judge plausibility for all possible outcomes with the use of explainable metrics
3. Display evidence so that dispatchers can monitor the efficacy of the system

Option #2: Semi-Autonomous System

Humans can confirm or reject the A.I.'s the system's decision. But, how much should the decision of the system influence a dispatcher's decision? Our hypothesis-driven framework is vital here.

Pros:

- Still can greatly reduce workload leading to high productivity
- Labor is divided more evenly between humans and A.I. optimizing for the skillsets of both

Cons:

- Effectiveness of the system depends on how effectively dispatchers can identify erroneous explanations and refute explanations to accept or reject a system's decision.

If chosen, dispatchers should be trained to better understand the range of responses from this system and how to validate or refute explanations from the A.I system.

DNN Hypothesis-Driven Framework

1. Generate the hypothesis or classification
2. Judge plausibility for all possible outcomes with the use of explainable metrics
3. Display evidence so that dispatchers can better decide to reject or accept the system's decision

Option #3: Human-Support System

Humans simply use the A.I. system to aid their decision making process, achieving **enhanced human capabilities**

Pros:

- Workload of dispatchers is reduced
- Most of the decision-making process is up to the dispatcher.
- Easiest version to roll-out

Cons:

- A.I. system may not being fully utilized or utilized erroneously, thus an even greater emphasis needs to be placed on training dispatchers on how to use the effectively use the system.

This is the **easiest version to roll-out**, with less ability to cause additional harms

DNN Hypothesis-Driven Framework

1. The dispatcher generates their conclusion without knowing the decision by the A.I system
2. A.I system generates the hypothesis or classification
3. Judge plausibility for all possible outcomes with the use of explainable metrics
4. Display evidence so that dispatchers can utilize the explanations and decisions to ultimately make a sound decision

Options

System	Automation	Productivity Effects	Labor Impact
Fully Autonomous System	High	High	Reduced dispatcher workforce
Semi-Autonomous System	Medium	High	Hybrid workforce model requiring the skill sets of both
Human-Support System	Low	Moderate	Enhanced human capability

POLICY IMPLEMENTATION ROADMAP

Phase 1

- Conduct comprehensive audit of existing Computer-Aided Dispatch (CAD) infrastructure
- Evaluate current integration points with existing systems
- Define security and privacy compliance requirements

Phase 2

- Core system development
- Integration Components
- Establish cross-jurisdictional data sharing protocols with partner agencies
- Select high-priority district(s) for initial deployment

Phase 3

- Train designated first responders on AI-enabled body cameras and translation systems
- Establish performance protocols
- Comprehensive training program for dispatchers

Phase 4

- Conduct metric assessments
- Technical training for systems administrators
- Deploy AI-CAD system to remaining districts

Phase 5

- Machine learning refinement based on accumulated data
- Integration of community feedback, engagement & education initiatives



**Any
Questions!**