



# 7000+ First Responders Have More to Say: Nationwide Usability Survey Results At Your Fingertips

NIST Usability Team

NIST

#PSCR2020



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The National Institute of Standards and Technology Research Protections Office reviewed the protocol for this project and determined it meets the criteria for “exempt human subjects research” as defined in 15 CFR 27, the Common Rule for the Protection of Human Subjects.

**\* Please note, unless mentioned in reference to a NIST Publication, all information and data presented is preliminary/in-progress and subject to change**

# Roadmap for Today's Presentation



Nationwide Survey Overview

Mobile Devices & Apps

Futuristic Technology

Technology for Large Events

Publications & Online Resources



# Voices of First Responders **Need to be Heard**

## Multi-Method Research Design

### Phase 1 In-Depth Interviews

- 1 Goals**
  - Problem
  - Purpose
  - Research questions
- 2 Protocol**
  - Develop protocol
  - Identify sample
  - Pilot protocol
- 3 Data Collection**
  - Recruit participants
  - Conduct interviews
  - Have data transcribed
- 4 Analysis**
  - Create initial code book
  - Code interview data
  - Identify emergent themes
  - Analyze data/codes
- 5 Results**
  - Develop relationships
  - Identify variables

### ***Voices of First Responders, Phase 1: Findings from User-Centered Interviews***

- **Volume 1**  
overall methodology and preliminary findings
- **Volume 2**  
technology problems and requested functionality
- **Volume 3**  
contexts and challenges specifically facing rural first responders
- **Volume 4**  
contexts and challenges specifically facing 9-1-1 communications personnel

# Voices of First Responders **Need to be Heard**

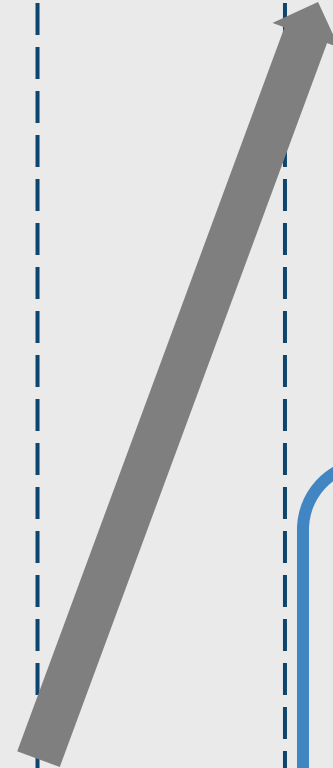
## Multi-Method Research Design

### Phase 1 In-Depth Interviews

- 1 Goals**
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- 4 Analysis**
  - Create initial code book
  - Code interview data
  - Identify emergent themes
  - Analyze data/codes
- 5 Results**
  - Develop relationships
  - Identify variables

### Phase 2 Nationwide Survey

- 1 Goals**
  - Problem
  - Purpose
  - Research questions
- 2 Survey Instrument**
  - Survey items and scales
  - Reviews: content and survey experts, pseudo-participants
  - Refine instrument
- 3 Data Collection**
  - Disseminate survey
  - Send reminders
  - Monitor responses
- 4 Analysis**
  - Perform data analysis
  - Quantitative
  - Qualitative
- 5 Results**
  - Describe sample
  - Draw inferences
  - Identify usability requirements

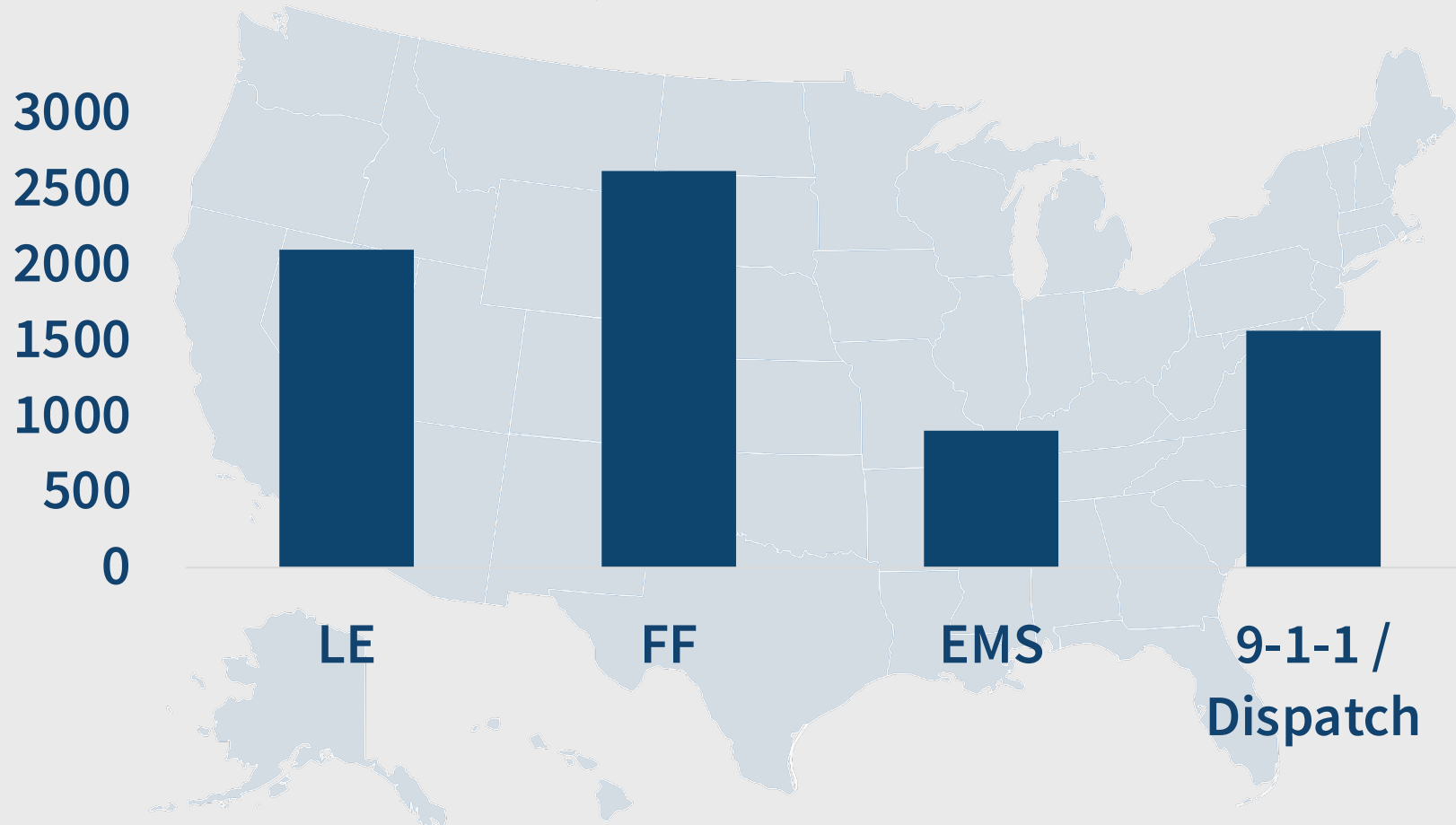




# Nationwide First Responder **Survey Participation**

Target sample size = 5,800

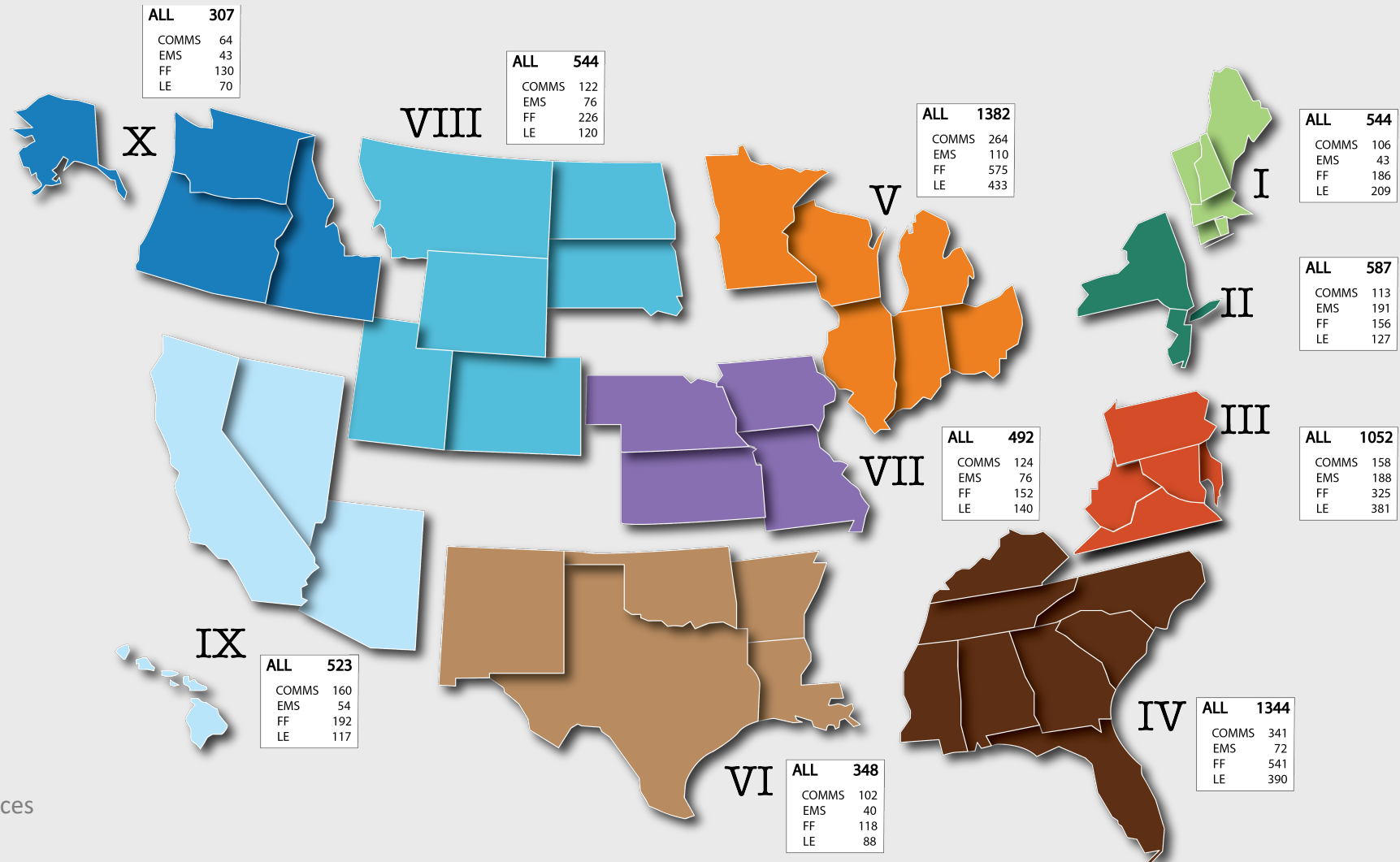
**7,182 Respondents**



LE: Law Enforcement  
FF: Fire Fighting  
EMS: Emergency Medical Services

# Nationwide First Responder Survey Coverage

## Participation by FEMA Region





# Survey Results Highlights



# Mobile Device Use



95%

Use Smartphones



98%



98%



95%



85%



50%

Use Tablets



65%



60%

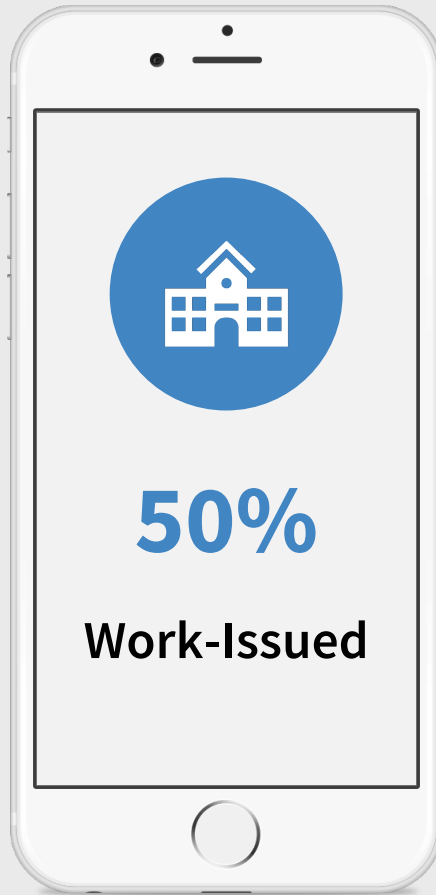
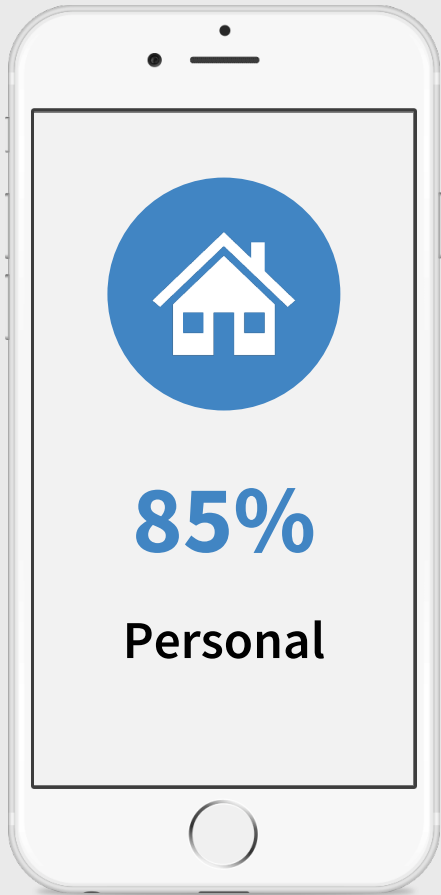


30%



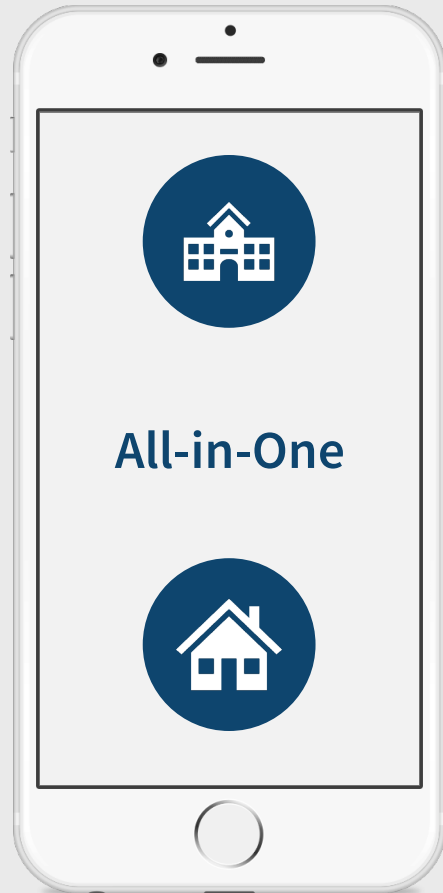
# Mobile Device Use: Smartphones

Across Disciplines



# Mobile Device Use: Smartphones

Across Disciplines



"...this is either my personal phone that does both or my city-issued phone that I can - whether it's a double SIM or something... I mean, these phones are huge now, which is great. But **I don't want two of them.**"

(Interview Quote, INT-LE-U-006)

# Smartphone Problems

“Almost” or “Most of the time”





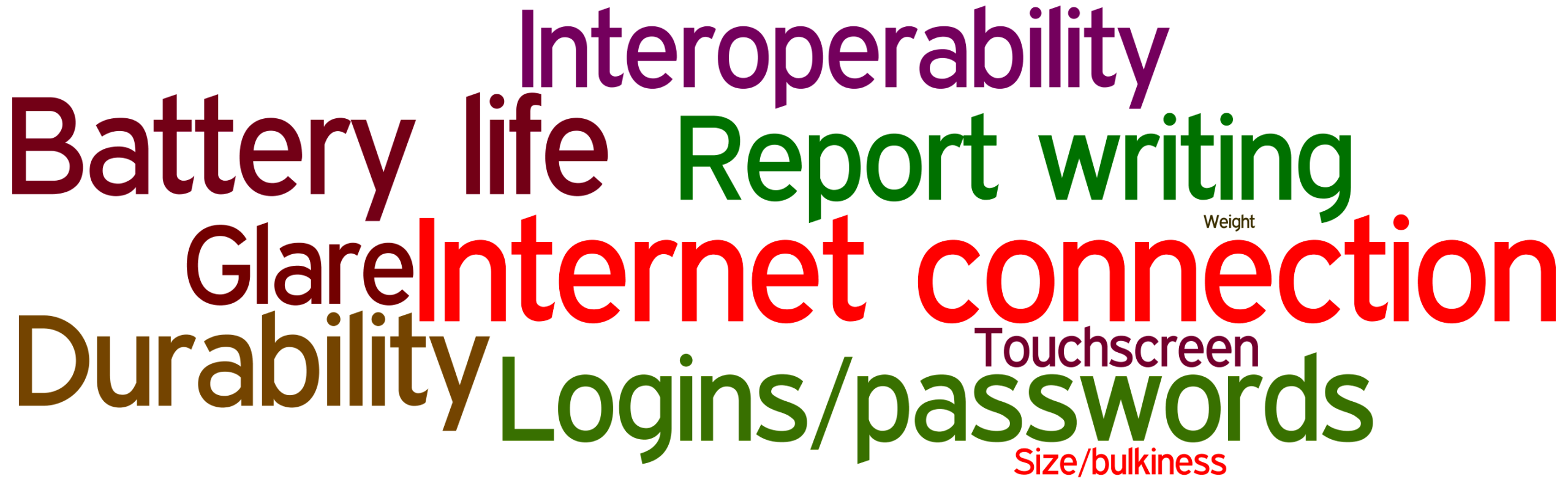
# Smartphone Problems

At least “Sometimes”



# Tablet Problems

”Almost” or “Most of the time”



A word cloud of tablet-related problems. The words are arranged in a cluster, with 'Internet connection' being the largest and most central. Other prominent words include 'Battery life', 'Report writing', 'Logins/passwords', 'Durability', 'Glare', and 'Interoperability'. Smaller words like 'Touchscreen', 'Weight', and 'Size/bulkiness' are also present, often serving as descriptors for the larger words.

Interoperability

Battery life

Report writing

Glare

Internet connection

Durability

Logins/passwords

Touchscreen

Weight

Size/bulkiness

# Tablet Problems

At least “Sometimes”





# Most Used Apps

Across Disciplines



● Email

● CAD

● RMS

● Mapping/  
driving  
directions

# Most Used Apps

9-1-1/Dispatch



CAD  
95%



Email  
80%



**Criminal  
Databases**  
**70%**



RMS  
60%



Mapping/ driving  
directions  
60%

# Most Used Apps



EMS



Email  
90%



**ePCR**  
**80%**



CAD  
60%



Mapping/ driving  
directions  
60%



# Most Used Apps

Fire Fighting



Email  
90%



CAD  
60%



Mapping/ driving  
directions  
50%



**Report  
writing  
40%**



RMS  
40%

# Most Used Apps

Law Enforcement



Email  
95%



RMS  
70%



CAD  
60%



**Criminal  
Databases  
50%**



**Report  
writing  
50%**

# Large Events: Technology



## Major Disasters



## Large Planned Events



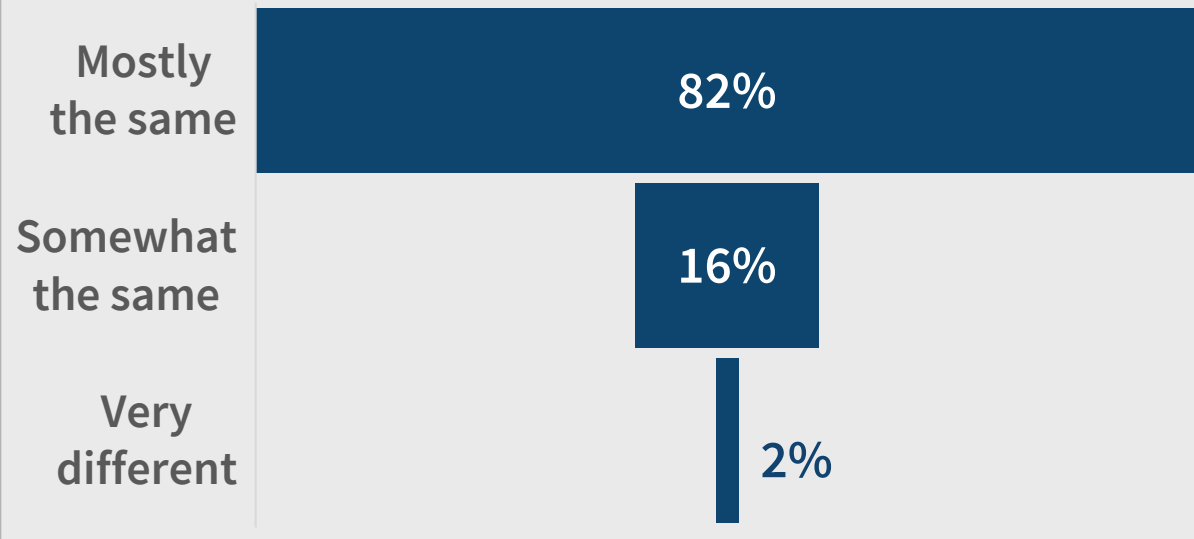
90 % worked a large event



# Large Events: Technology



## Large event vs day-to-day tech



## Special tech needs

Mobile Command Center

Deployables

Generators

Drones

*\*The Large Events survey section asked about technology use in Major Disasters (e.g., hurricanes) and Large Planned Events (e.g., parades)*

# Large Events: Technology



## Open-ended responses

Same tech as Day-to-Day

Personnel

Interoperability

Cost

**“Nothing specialized**  
... same technology that is  
used every day, just the  
**scale of use is bigger.”**  
(COMMS:S:6878)

*\*The Large Events survey section asked about technology use in Major Disasters (e.g., hurricanes) and Large Planned Events (e.g., parades)*

# Large Events: Technology



## Open-ended responses

Same tech as Day-to-Day

Personnel

Interoperability

Cost

“Besides personnel, the ability to quickly access **additional human and equipment** inventories is very beneficial.”

(LE:R:2088)

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# Large Events: Technology



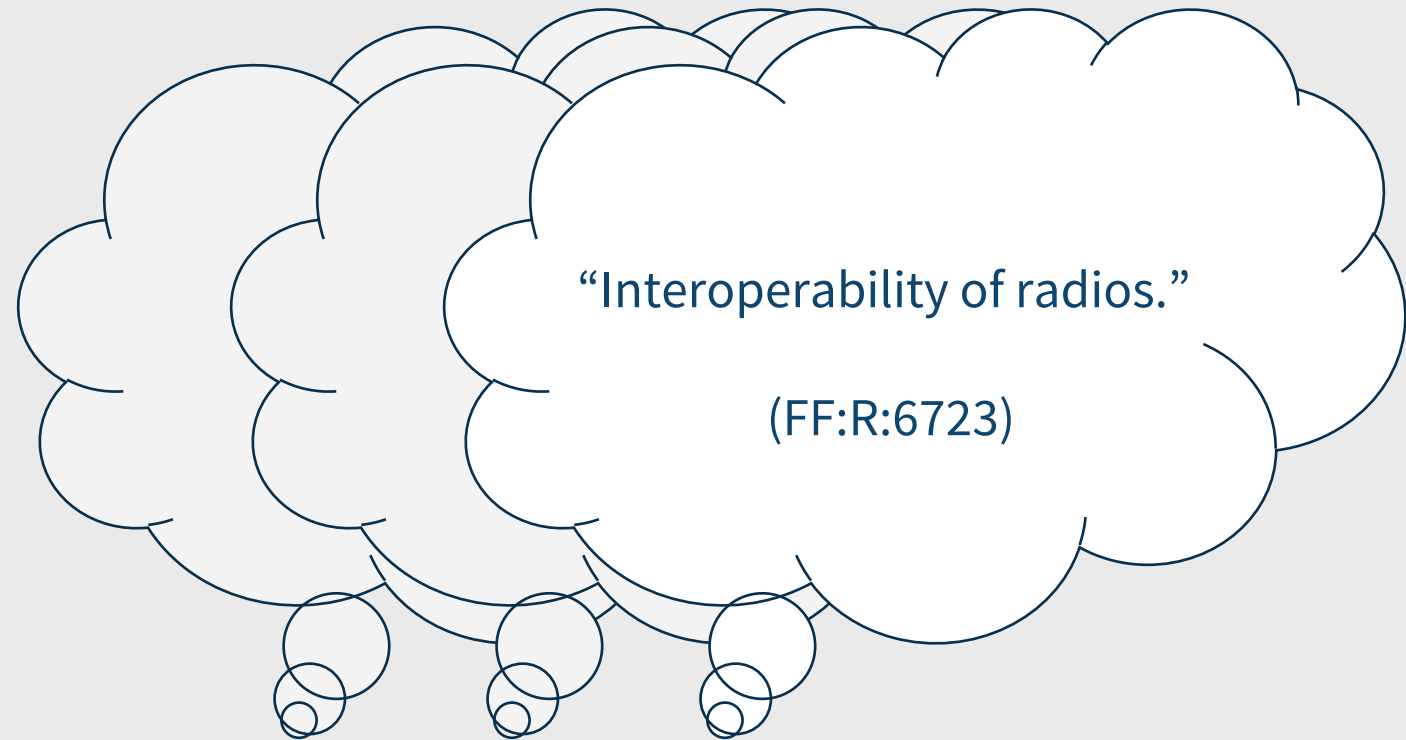
## Open-ended responses

Same tech as Day-to-Day

Personnel

Interoperability

Cost



*\*The Large Events survey section asked about technology use in Major Disasters (e.g., hurricanes) and Large Planned Events (e.g., parades)*

# Large Events: Technology



## Open-ended responses

Same tech as Day-to-Day

Personnel

Interoperability

Cost

“We do not have special technology due to the **cost.**”

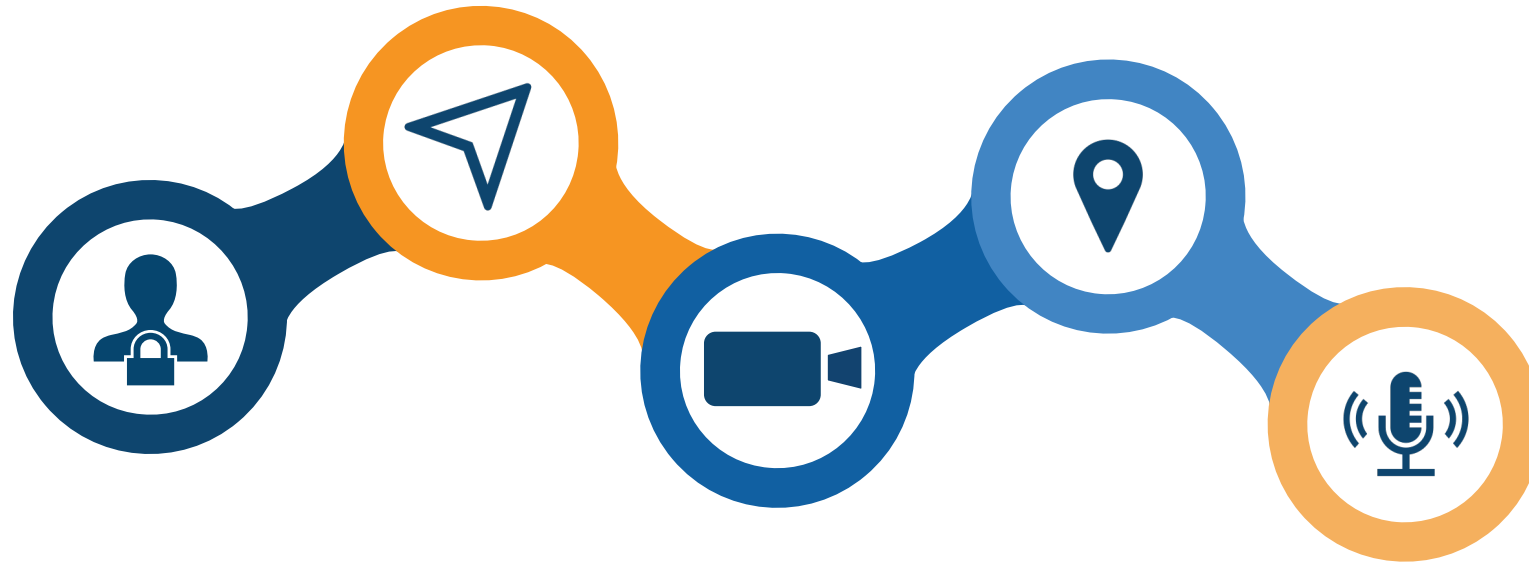
(EMS:R:5196)

*\*The Large Events survey section asked about technology use in Major Disasters (e.g., hurricanes) and Large Planned Events (e.g., parades)*



# Futuristic Technology

Across Disciplines



● **One login:**  
single sign-on

● **Tracking:**  
responders &  
vehicles

● **Video:**  
real-time on-  
scene

● **Indoor  
mapping:**  
navigation

● **Voice  
controls:**  
hands-free  
interaction

# Futuristic Technology

9-1-1/Dispatch Call Centers: Receiving Texts



## 75%

receiving texts  
would be beneficial



## Pros

- If no alternative
- Convenience



## Cons

- More time/resources
- Lack of non-verbal information

# Futuristic Technology



9-1-1/Dispatch Call Centers: Receiving Texts Pros

“Assists the **hearing impaired** community. We had a school shooting and I wish we had text at that time so the students would have **felt safer**, they were trying to whisper on the phone so as **not to make any more noise** than necessary.”

(COMMS:R: 9048)

# Futuristic Technology



## 9-1-1/Dispatch Call Centers: Receiving Texts Cons

“Based on our experience, text to 911 messages take **three times as long to process.**

Therefore they drag down our 911 answering capacity... Texts prevent the 911 Operator from gathering **unspoken contextual clues** to the emergency, such as heavy breathing, background noises, screams, gunshots, etc.”

(COMMS:U:1855)

# Futuristic Technology



9-1-1/Dispatch Call Centers: Receiving Pictures/Videos



## 50%

receiving pictures/videos  
would be beneficial



## Pros

- More non-verbal information



## Cons

- Inappropriate/graphic images
- PTSD
- Data storage/retrieval
- Increased call times



# Futuristic Technology



9-1-1/Dispatch Call Centers: Receiving Pictures/Videos Pros

**“Picture is worth a 1000 words.** Image of suspect could be sent to police officers. Gravity of situation could be **quickly assessed** and EMD might be administered more quickly. Medical personnel might be able to **prepare before patient arrives** at hospital.”

(COMMS:S:1885)

# Futuristic Technology



9-1-1/Dispatch Call Centers: Receiving Pictures/Videos Cons

“**Exposure** of public safety telecommunicators to **potentially traumatic images or videos** that is not necessary for dispatching emergency responders to the scene... A verbal or text description of the situation can give the information needed to dispatch an appropriate response. Even if a specific image or video may be helpful, **not all telecommunicators want to see that...**”

(COMMS:U:4336)

*\*COMMS:U:4336 quote continued on next slide*

# Futuristic Technology



9-1-1/Dispatch Call Centers: Receiving Pictures/Videos Cons

“...Further, it is likely that this capability will be extorted by some individuals to **intentionally send inappropriate or harmful material**. Pictures and videos require significant **storage space**. This will require development of systems to store these items in accordance with various agency retention periods, and **funding** for that development and for the ongoing storage requirements.”

(COMMS:U:4336)

# Futuristic Technology

9-1-1/Dispatch Call Centers: NG 9-1-1



**90%**

Heard of NG 9-1-1



**75%**

NG 9-1-1  
would be helpful

# Virtual Reality



50%

Useful for Training



60%



50%



50%



30%



20%

Useful for Other Purposes



20%



20%



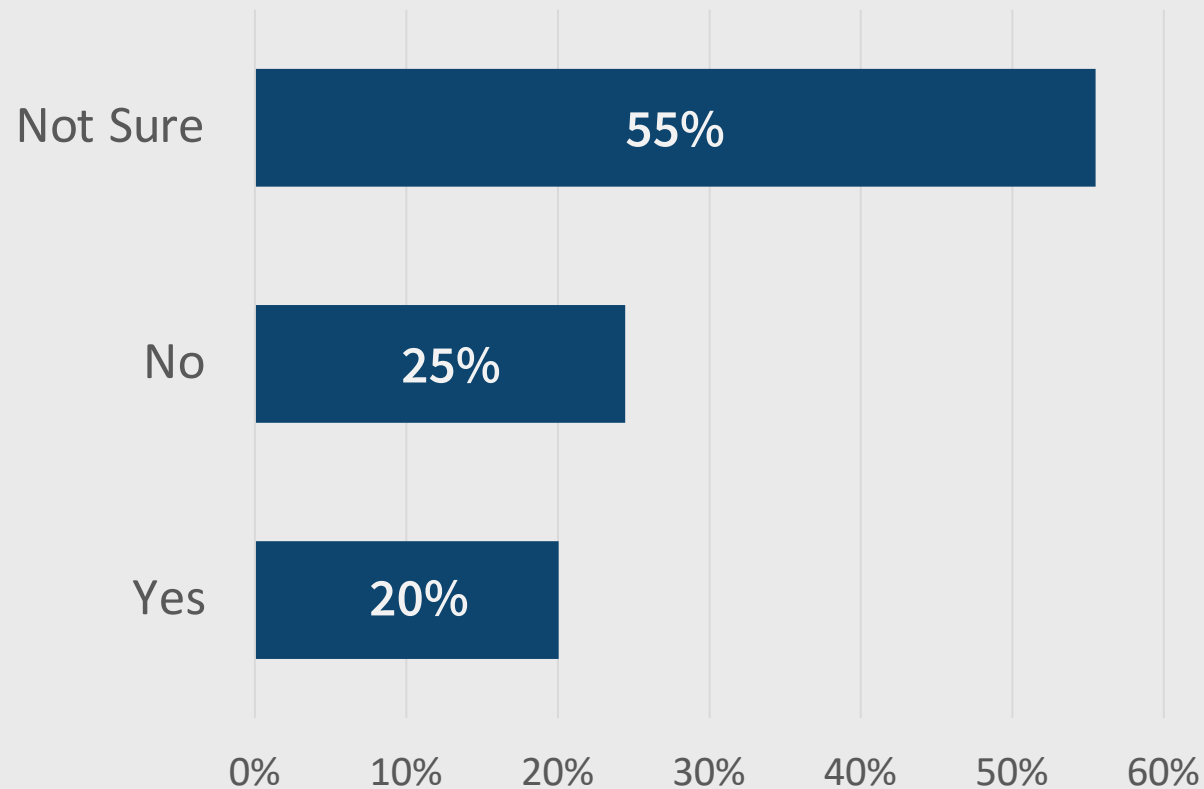
20%



10%

# Virtual Reality

Useful for Other Purposes



## Open-ended Responses

Use for training

Not for operations, etc.

Cost barrier

VR unknown

Prefer AR



# Virtual Reality

## Open-ended Responses



**“Training,** but I am not yet able to see the applicability of VR in the day-to-day operations.”  
(EMS:S:2482)

# Virtual Reality

## Open-ended Responses



“There is **no replacing real experience**. As the number of fires dwindle nationwide, I think our dumbed down hyper sterilized training has become a detriment to firefighters. It is no longer realistic and **does not prepare us.**”

(FF:S:818)

# Virtual Reality

## Open-ended Responses



“I think the VR technology is a helpful training tool, but **not worth the expense** for a small agency like ours. If we could have a shared VR venue at perhaps the state level, it may be more useful.”

(LE:U:7371)

# Virtual Reality

## Open-ended Responses



“I see more applications where **AR**  
**would be useful**, not sure of the  
situations wherein VR would be  
applicable other than training.”  
(LE:S:9006)

# Survey Results Conclusion



# Focus on User Needs



## CURRENT

Fix current tech first – it must be reliable and work as expected



## FUTURE

First responders can envision utility of new tech if it meets their needs



## AFFORDABLE

Cost can be a prohibitor for technology adoption



## RESPONDERS

Needs must drive all technology R&D



# Publications & Online Resources



## Voices of First Responders, Phase 1: Findings from User-Centered Interviews

- Volume 1 – Identifying Public Safety Communication Problems ([NISTIR 8216](#))
- Volume 2 – Examining Public Safety Communication Problems and Requested Functionality ([NISTIR 8245](#))
- Volume 3 – Examining Public Safety Communication from the Rural Perspective([NISTIR 8277](#))
- Volume 4 – Examining Public Safety Communication from the Perspective of 9-1-1 Call Takers and Dispatchers ([NISTIR 8295](#))



## Voices of First Responders, Phase 2: Nationwide Public Safety Communication Survey

- Volume 1 – Methodology: Development, Dissemination, and Demographics ([NISTIR 8288](#))



## Incident Scenarios Collection for Public Safety Communications Research: Framing the Context of Use ([NISTIR 8181](#))



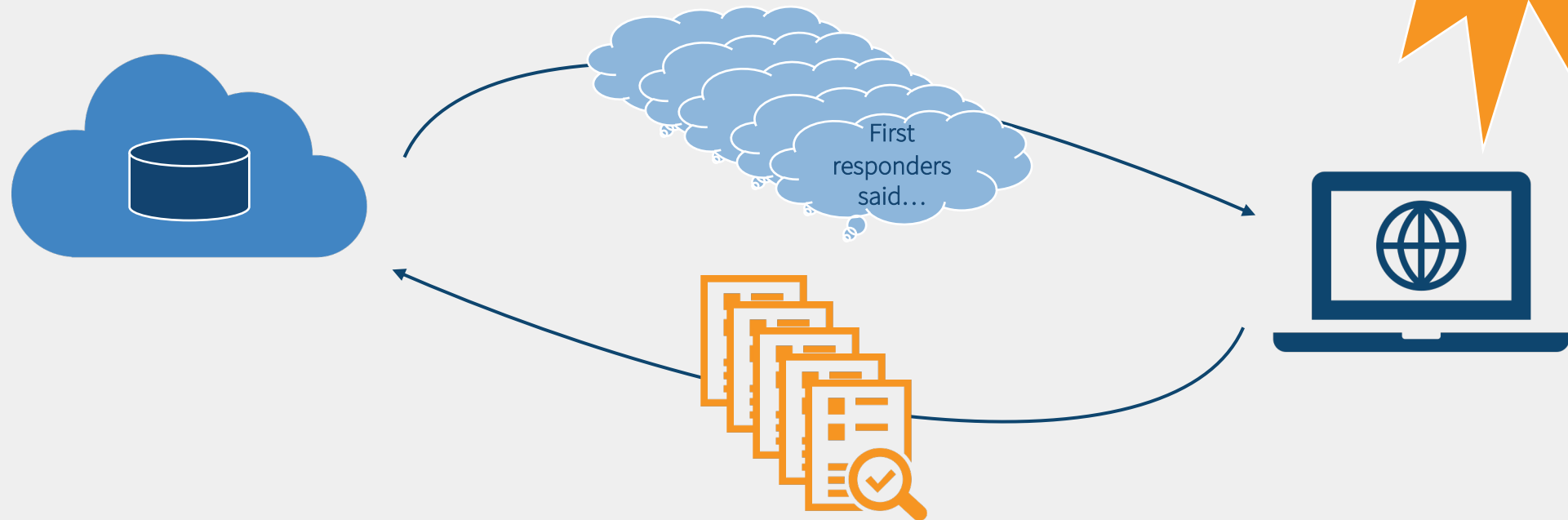
## Usability Handbook for Public Safety Communications – Ensuring Successful Systems for First Responders ([NIST Handbook 161](#))



## Upcoming publications

- Phase 2 survey analysis & results – other volumes coming soon
- Report on how to apply Human Factors principles to improve usability

# Full Survey Dataset **Online**



<https://publicsafety.nist.gov>

# PSCR Usability Results Tool: Voices of First Responders

*Results of a large-scale survey and in-depth interviews with first responders  
across the U.S. about their communication technology use.*

[Survey Results](#)[Interview Quotes](#)

The Usability Team of the National Institute of Standards and Technology's (NIST) Public Safety Communications Research (PSCR) program works to identify issues faced by first responders surrounding the use of their existing and emerging public safety communication technology. The Usability Team conducted a series of in-depth interviews with approximately 200 first responders about their views on communication technology. The results of these interviews informed a nationwide, large-scale survey completed by over 7,000 first responders. This tool provides public access to over 20,000 first responder quotes from the first responder interview data, as well as the 7,182 survey responses.

The survey results, accessed via the *Survey Results Tool*, and the interview quotes, available via the *Interview Quotes Tool*, can be freely used to influence the research, design and development of communication technology in the public safety domain. Any interview quotes or survey results used in published materials should properly attribute this tool as well as the appropriate NISTIR reports in the series of volumes published as detailed in the [Interview Quotes Tool FAQ](#) as well as the [Survey Results Tool FAQ](#). Information about the research methodology and instrument design for both the interview and survey protocols, as well as instructions on how to interpret the results, can also be found in these FAQs.

For more information about the NIST PSCR Usability Team research, or for questions regarding the PSCR Usability Results Tool, please send an email to [usability@nist.gov](mailto:usability@nist.gov). More information about the PSCR program can be found at [pscrgov.org](https://pscrgov.org).

Show/Hide Columns:

- Discipline
- Area
- Role
- Age
- Experience
- Gender

Showing 1 to 100 of 20,189 quotes

Show 100 quotes

Previous 1 2 3 4 5 ... 202 Next

Filter by:

- Discipline
- Area
- Code/Subcode
- Role
- Age (Years)
- Experience (Years)
- Gender

Code - Subcode	Discipline	Area	Role	Age	Experience	Gender	Transcript ID	Quotes	
Change	COMMS	R	Not specified	Not specified	Not specified	Not specified	COMMS-R-019	[S1]: Actually, it changed may be years ago probably, probably at least 10. It's been -- it started out as a slow transition but then became pretty...	+
Change	COMMS	R	Not specified	Not specified	Not specified	Not specified	COMMS-R-019	[S3]: 14 days yeah, we got really short several years ago. We used to run day shift, evening shift, and night shift like everybody else. We got...	+
Change	COMMS	R	Not specified	Not specified	Not specified	Not specified	COMMS-R-019	[S5]: You don't ask what kind of changes we have seen. I mean, I remember the day when I was at the police [Crosstalk]. There was a phone and you...	+
Change	COMMS	R	Not specified	Not specified	Not specified	Not specified	COMMS-R-019	[S5] Okay, because new technology and people are here and people are having trouble with it and misrouting calls so we're just going to wait. Okay,...	+
Change	COMMS	R	Not specified	Not specified	Not specified	Not specified	COMMS-R-019	[S1]Now, as far as it's going to be [inaudible], you know, I mean, they are going to have plenty of capacity because, you know, there are going to...	+
Change	COMMS	R	Not specified	Not specified	Not specified	Not specified	COMMS-R-019	[S5]: Well, it's going to be different, you know, once they do that and the call trackers and it's going to be -- it's going to sound different than...	+
			Comms				COMMS-R	So ATCO has a program called ATCO Meds and we use it on our computer when we	

Show/Hide Columns:

Discipline

Area

Role

Age

Experience

Gender

Showing 1 to 100 of 1,119 quotes (filtered from 20,189 quotes)

Show 100 quotes

Previous

1

2

3

4

5

...

12

Next

Filter by:

[Clear all filters](#)

Discipline

Area

Code/Subcode

Change

Communication

Context of Work

Emotion

Frustration

Information

Operational Environment

Problems

Rules/Politics

Technology

Reliance on Technology

Positives about/with Technology

Training

Export PDF

Expand All

Code - Subcode	Discipline	Area	Role	Age	Experience	Gender	Transcript ID	Quotes	
Technology - Positives_about-with	COMMS	R	Manager	46-55	11-20	Female	COMMS-R-008	Or they'll have you know obviously we have redundancies of one of their fiber might have an issue but you're on the other fibers so they just move...	+
Technology - Positives_about-with	COMMS	R	Manager	46-55	11-20	Female	COMMS-R-008	Yeah CAD and RMS it does have to go that's for sure but I'm probably being pretty nice to my CAD but it's not the worst out there I know that but...	+
Technology - Positives_about-with	COMMS	R	Manager	46-55	11-20	Female	COMMS-R-008	And that's like one of the other CAD members were looking at. They do the same thing and then they also collect analytics along the way too along...	+
Technology - Positives_about-with	COMMS	R	Manager	46-55	11-20	Female	COMMS-R-008	You don't have to rely on user information to figure out where they are sending that long back to the system automatically just relying on geo...	+
Technology - Positives_about-with	COMMS	R	Manager	56-65	11-20	Male	COMMS-R-002	True. Well, each one of our consoles has four computers. There's a what we call a console computer, which is your basic. We have our remote desktop...	+
Technology - Positives_about-with	COMMS	R	Manager	56-65	11-20	Male	COMMS-R-002	So when we enter something into the supplementals like an officer runs a plate, we put that in, and it automatically runs that through...	+
Technology - Positives_about-with	COMMS	R	Manager	56-65	11-20	Male	COMMS-R-002	Radio is on the screen. And that one does recording. Of course, we have an instant recorder that comes with the radio and comes with the phone. So...	+
Technology - Positives_about-with	COMMS	R	Manager	56-65	11-20	Male	COMMS-R-002	Radio is on the screen. And that one does recording. Of course, we have an instant recorder that comes with the radio and comes with the phone. So...	+

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Show/Hide Question Topics:

Devices

Problems

Apps / Software

Futuristic

Large Events

Virtual Reality

9-1-1 / Dispatch Call  
Center Information

EMS Medical  
Technology

Final Comments

Demographics

Showing 1 to 100 of 7,182 records

Export

Show 100 records

Previous 1 2 3 4 5 ... 72 Next

Filter by:

► Discipline

► Area

► State

► FEMA Region

► Jurisdiction

► 9-1-1 / Dispatch  
Appointment

► EMS Agency

► Fire Department Type

► Age (Years)

► Experience (Years)

► Gender

Response ID	Discipline	Device: BodyCam	Device: Desktop	Device: Laptop	Device: DashCam	Device: Earpiece-Self	Device: Earpiece-Work	Device: Earpiece-Corded
1	Law Enforcement	Use occasionally	Use a lot	Use a lot	Use occasionally	Do not have	Do not have	Do not have
3	Law Enforcement	Do not have	Use a lot	Use occasionally	Do not have	Do not have	Do not have	Use occasionally
4	Law Enforcement	Do not have	Use a lot	Use occasionally	Use occasionally	Do not have	Do not have	Use occasionally
5	Law Enforcement	Use a lot	Use a lot	Use a lot	Use a lot			Use a lot
6	Law Enforcement	Use a lot	Use a lot	Have, but do not use	Use a lot	Do not have	Do not have	Do not have
7	Law Enforcement	Do not have	Use a lot	Use occasionally	Do not have	Do not have	Do not have	Do not have
8	Law Enforcement	Do not have	Use a lot	Do not have	Have, but do not use	Do not have	Do not have	Do not have
10	Law Enforcement	Do not have	Use a lot	Do not have	Use occasionally	Do not have	Do not have	Do not have
11	Law Enforcement	Do not have	Use a lot	Use a lot	Use occasionally	Do not have	Use occasionally	Use occasionally
12	Law Enforcement	Do not have	Use a lot	Do not have	Do not have	Do not have	Do not have	Do not have
13	Fire Fighting		Use a lot	Use occasionally		Do not have	Use occasionally	Do not have
14	Fire Fighting		Use a lot	Use occasionally		Do not have	Do not have	Use occasionally
16	Fire Fighting		Use a lot	Do not have		Do not have	Do not have	Do not have
17	Law Enforcement	Do not have	Use a lot	Do not have	Use a lot	Have, but do not use	Do not have	
18	Law Enforcement	Do not have	Use a lot	Use a lot	Use occasionally			Use occasionally
19	Fire Fighting		Use a lot	Use a lot		Do not have		Use occasionally
21	EMS		Use a lot	Have, but do not use		Do not have	Do not have	Do not have



Show/Hide Question Topics:

Devices

Problems

Apps / Software

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Showing 1 to 100 of 7,182 records

Export

Show 100 records

Previous 1 2 3 4 5 ... 72 Next

Filter by:

▸ Discipline

▸ Area

▸ State

▸ FEMA Region

▸ Jurisdiction

▸ 9-1-1 / Dispatch  
Appointment

▸ EMS Agency

▸ Fire Department Type

▸ Age (Years)

▸ Experience (Years)

▸ Gender

Response ID	Discipline	VR: Training Use	VR: Other Use	VR: List Other Uses	Area	State	FEMA Region	Jurisdiction	Appointment	Agency
1	Law Enforcement	Yes	Yes	This could help with real life training exercises.	Suburban	OH	5	Local		
3	Law Enforcement	Yes	Not sure		Suburban	MI	5	Local		
4	Law Enforcement	Not sure	Not sure		Rural	OH	5	Local		
5	Law Enforcement	Yes	Not sure		Suburban	OH	5	Local		
6	Law Enforcement	Not sure	Not sure		Urban	OH	5	Local		
7	Law Enforcement	Yes	Not sure		Urban	OH	5	Local		
8	Law Enforcement	Not sure	Not sure		Suburban	OH	5	Local		
10	Law Enforcement	Yes	Not sure		Suburban	OH	5	Local		
11	Law Enforcement	Not sure	Not sure		Urban	OH	5	Local		
12	Law Enforcement	Yes	No		Suburban	OH	5	Local		
13	Fire Fighting	Yes	Yes		Suburban	OH	5	Local		
14	Fire Fighting	Yes	Not sure		Rural	OH	5	Local		
16	Fire Fighting	Not sure	Not sure		Suburban	OH	5	Local		
17	Law Enforcement	Yes	Not sure		Suburban	OH	5	Local		
18	Law Enforcement	Yes	Yes		Suburban	OH	5	Local		
19	Fire Fighting	Yes	Not sure		Suburban	OH	5	Local		
21	FMS	Yes	Yes		Rural	OH	5	Local		Public



Show/Hide Question Topics:

- Devices
- Problems
- Apps / Software
- Futuristic
- Large Events
- Virtual Reality
- 9-1-1 / Dispatch Call Center Information
- EMS Medical Technology
- Final Comments
- Demographics

Showing 1 to 16 of 16 records  
(filtered from 7,182 records)

Export

Show 100 records

Previous 1 Next

Response ID	Discipline	VR: Training Use	VR: Other Use	VR: List Other Uses	Area	State	FEMA Region	Jurisdiction	Appointment	Agency	Department	Age
186	Fire Fighting	Yes	No		Rural	AZ	9	Local			Volunteer	57
339	Fire Fighting	Yes	Yes		Rural	AZ	9	County			Volunteer	46
777	Fire Fighting	Yes	Yes		Rural	AZ	9	Local			Volunteer	47
1785	Fire Fighting	Yes	Yes	Training	Urban	CA	9	Local			Volunteer	55
1960	Fire Fighting	No	No	Get the basics working first. Basic communications for both emergency personnel and the public is key.	Rural	CA	9	Local			Volunteer	61
1984	Fire Fighting	No	No		Rural	CA	9	County			Volunteer	64
1987	Fire Fighting	Not sure	Not sure		Rural	CA	9	County			Volunteer	70 or over
2939	Fire Fighting	No	No		Rural	AZ	9				Volunteer	30
3357	Fire Fighting	No	Not sure		Rural	AZ	9	Local			Volunteer	58
3604	Fire Fighting	Not sure	Not sure		Suburban	CA	9	Local			Volunteer	38
3696	Fire Fighting	Not sure	Not sure		Rural	NV	9	Local			Volunteer	70 or over
3768	Fire Fighting	Not sure	Not sure		Urban	CA	9	Federal			Volunteer	54
3803	Fire Fighting	Not sure	Not sure	Have not investigated it nor seen it.	Rural	CA	9	Local			Volunteer	62
3828	Fire Fighting	Not sure	No		Suburban	CA	9	Local			Volunteer	51
5060	Fire Fighting	Yes	Not sure	non other than training	Suburban	CA	9	Local			Volunteer	42
7968	Fire Fighting	Yes	Not sure		Rural	NV	9	County			Volunteer	67

Showing 1 to 16 of 16 records  
(filtered from 7,182 records)

Export

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Filter by:

Clear all filters

Discipline

Area

State

FEMA Region

Clear

Region 1

Region 2

Region 3

Region 4

Region 5

Region 6

Region 7

Region 8

Region 9

Region 10

Jurisdiction

9-1-1 / Dispatch Appointment

EMS Agency

Fire Department Type

Clear

Career

Volunteer

Show/Hide Question Topics:

- [Devices](#)
[Problems](#)
[Apps / Software](#)
[Futuristic](#)
[Large Events](#)
[Virtual Reality](#)
[9-1-1 / Dispatch Call Center Information](#)
[EMS Medical Technology](#)
[Final Comments](#)
[Demographics](#)

Showing 1 to 16 of 16 records  
(filtered from 7,182 records)

Export

Show 100 records

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Response ID	Discipline	Radio Prob: Audio	Radio Prob: Battery	Radio Prob: Channels	Radio Prob: Cord	Radio Prob: Coverage	Radio Prob: Durability	Radio Prob: Interoperability	Radio Prob: Other
186	Fire Fighting	Sometimes	Sometimes	Rarely	Does not apply	Sometimes	Rarely	Rarely	Rarely
339	Fire Fighting								
777	Fire Fighting	Rarely	Always	Sometimes	Rarely	Always	Rarely	Always	Always
1785	Fire Fighting	Sometimes	Sometimes	Never	Sometimes	Most of the time	Rarely	Rarely	Rarely
1960	Fire Fighting								
1984	Fire Fighting	Always	Always	Always	Most of the time	Always	Most of the time	Most of the time	Always
1987	Fire Fighting	Sometimes	Sometimes	Sometimes	Rarely	Sometimes	Rarely	Rarely	Rarely
2939	Fire Fighting	Sometimes	Sometimes	Rarely	Rarely	Sometimes	Sometimes	Sometimes	Rarely
3357	Fire Fighting	Never	Never	Never	Never	Rarely	Never	Never	Never
3604	Fire Fighting	Sometimes	Sometimes	Never	Rarely	Sometimes	Sometimes	Rarely	Rarely
3696	Fire Fighting		Rarely	Never	Never	Never	Never	Sometimes	Sometimes
3768	Fire Fighting	Rarely	Most of the time	Never	Rarely	Sometimes	Never	Never	Sometimes
3802	Fire Fighting	Sometimes	Most of the time	Rarely	Rarely	Most of the time	Rarely	Rarely	Rarely

Show/Hide:

Problems

- ☐ 9-1-1 / Dispatch Information
  - ☒ Radio
  - ☒ Mic
  - ☒ Pager
  - ☒ MDT
  - ☒ Smartphone
  - ☒ Laptop
  - ☒ Tablet
  - ☒ Desktop
  - ☒ Earpiece
  - ☒ TIC
  - ☒ BodyCam
  - ☒ Fingerprint
  - ☒ LPR

# Frequently Asked Questions

## Survey Results Tool FAQs

### Guidance for Using the Survey Results Tool

- ▶ How to navigate the results?
- ▶ Is there a way to work with a subset of the results?
- ▶ How can results be downloaded?

### Interpreting the data

- ▶ What is the Response ID?
- ▶ What are the state abbreviations, and which states are in each FEMA region?

#### ▼ What do the column headings mean?

Each column represents a different question asked in the survey. Due to the length of the questions, a shorter descriptor was used for the column headings. The mapping between each column heading descriptor and its corresponding survey question can be found [here](#). Screenshots of how each question appeared on the survey can be found [here](#).

- ▶ How should blank cells in the survey results table be interpreted?

### Research Methodology and Information

# PSCR Usability Results Tool: Voices of First Responders

*Results of a large-scale survey and in-depth interviews with first responders  
across the U.S. about their communication technology use.*

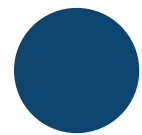
[Survey Results](#)[Interview Quotes](#)

The Usability Team of the National Institute of Standards and Technology's (NIST) Public Safety Communications Research (PSCR) program works to identify issues faced by first responders surrounding the use of their existing and emerging public safety communication technology. The Usability Team conducted a series of in-depth interviews with approximately 200 first responders about their views on communication technology. The results of these interviews informed a nationwide, large-scale survey completed by over 7,000 first responders. This tool provides public access to over 20,000 first responder quotes from the first responder interview data, as well as the 7,182 survey responses.

The survey results, accessed via the *Survey Results Tool*, and the interview quotes, available via the *Interview Quotes Tool*, can be freely used to influence the research, design and development of communication technology in the public safety domain. Any interview quotes or survey results used in published materials should properly attribute this tool as well as the appropriate NISTIR reports in the series of volumes published as detailed in the [Interview Quotes Tool FAQ](#) as well as the [Survey Results Tool FAQ](#). Information about the research methodology and instrument design for both the interview and survey protocols, as well as instructions on how to interpret the results, can also be found in these FAQs.

For more information about the NIST PSCR Usability Team research, or for questions regarding the PSCR Usability Results Tool, please send an email to [usability@nist.gov](mailto:usability@nist.gov). More information about the PSCR program can be found at [pscrgov.org](https://pscrgov.org).

# Contact Us



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PSCR UI/UX Portfolio  
<https://www.nist.gov/ctl/pscr/research-portfolios/user-interfaceuser-experience>

# THANK YOU



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