

# Alternate 9-1-1; Field-based Call Taking System

November 1, 2018  
Jim Oberhofer KN6PE



# The Situation

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- Wide-area and extended power outage (natural disaster or cyberattack), or massive coordinated cable cut (terrorist) leads to loss of communications and impede our ability to call for help.
- In most cities, ARES/RACES can deploy to (i) keep the EOC informed as to what's happening in the community, and (ii) collect requests for help and passes it to their local Dispatch centers.

# The Situation

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- Cupertino, Saratoga, and Los Altos Hills contract with Santa Clara County for all Sheriff, Fire, EMS, and dispatch services.
- In the event of a total telephone service outage, the public in these cities has no way to request 9-1-1 assistance.
- During the 2009 Morgan Hill cable cut, RACES responders staffed key city locations and the city's Dispatch Center (PSAP) to pass 9-1-1 assistance requests.
- There is no local **PSAP** in Cupertino, Saratoga, or Los Altos Hills.
- We cannot easily pass 9-1-1 traffic because (i) our PSAP is located 15 miles away in San Jose, and (ii) DSW restrictions do not easily let us operate outside our city.

# The Situation

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## Objective

For a resident looking for help, develop an approach to...

1. ask the right questions,
2. collect enough information, and
3. deliver it to County Comm to ensure a sufficiently dispatchable event.

# What is a PSAP?

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**definition:** Public-Safety Answering (or access) Point (PSAP)

- A call center responsible for answering calls made to an emergency telephone number for police, firefighting, and ambulance services.
- Then, responsible for dispatching these emergency services.



# Santa Clara County Comm

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1. Santa Clara County operates our PSAP (County Comm) in San Jose off of Rt 87.
2. Receives 9-1-1 calls and manages them with a Computer Aided Dispatch system.
3. Dispatches all calls for County Fire, Sheriff, and EMS.
4. Requests mutual aid from surrounding jurisdictions as necessary.
5. Dispatches County emergency services in support of mutual aid.
6. 24/7 Operation.





# County Comm Operations

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- Divides their operation into 3 “communities”
  - Law – Sheriff’s Office
  - Fire – County Fire
  - EMS – County Ambulance
- Each community can receive calls and dispatch any emergency services.
- Each community consists of at least one call-taker and one dispatcher.



# Where do 9-1-1 requests come from?

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- **Landline telephone** – individuals dial 9-1-1 and, depending on their location, the call is routed to their assigned PSAP.
- **Cell phone** – cell towers are linked to specific PSAPs. However, some cell towers may overlap jurisdictions requiring calls to be transferred to the correct PSAP.
- **Other PSAPs** – different levels of automated information handoff exists between neighboring PSAPs to pass a call that belongs to another jurisdiction.
- **Deployed public safety responders** – Fire, Sheriff, and EMS responders can initiate calls from what they observe while deployed.
- **Ham Radio responders** – during catastrophic communications loss, CERT and ham radio volunteers will deploy to field locations and the local PSAP to relay calls from residents needing assistance.





# County Comm Tools

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1. **Computer Aided Dispatch**
2. **Manual dispatch processes**
3. **Medical Priority Dispatch System**



# County Comm Tools – CAD

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## 1. Computer Aided Dispatch

- Computer-aided dispatch (CAD), also called computer-assisted dispatch, is a method of dispatching taxicabs, couriers, field service technicians, mass transit vehicles or ***emergency services*** assisted by computer.
- System services are typically:
  - Call taking
  - Call dispatching
  - Call status and updating
  - Event notes
  - Field unit status and tracking, and
  - Call resolution and disposition



# County Comm Tools – Manual

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## 2. Manual Dispatch Process

- County Comm has a backup paper-based process for recording and dispatching calls in the event of a system failure (loss of power or computer problem).
- Although done on paper, the process is essentially the same:
  - Call taking
  - Call dispatching
  - Call status and updating
  - Event notes
  - Field unit status and tracking, and
  - Call resolution and disposition



# County Comm Tools

## 2. Manual Dispatch Process

Type: <b>Stroke</b>	Location: <b>2700 Carol DR</b>						Unit:					
<b>LAW</b>	Pri:	St:	SB:	Addr Add'l: <b>County Communications</b>			Map:					
<b>MED</b>	CD:	Zone:	EMD:	MPDS:	RP: <b>Bert Hildebrand</b>	*RP Phone: <b>408-977-3200</b>						
<b>FIRE</b>	LVL:	CD:	Run Cd:	Sta:	F-Jur:	RP Addr:	Cnt:					
<b>LG</b>	Who Notified:		By:		Veh:		Lic:	Ls:				
C22/C33			Details: <b>60 yls male left side numbness</b>									
At:		By:										
C4/955		By:										
At:		By:										
"10-22"		By:										
Dryrun:												
At:		Code:										
Date & TOC			Dev / DSN:		Backed in By:		Mutaid RZ:		Freq Assign:		Event #:	

620 REV 10/05

# County Comm Tools – MPDS

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## 3. Medical Priority Dispatch System

- An system used to dispatch the appropriate aid to medical emergencies including systematic caller interrogation and pre-arrival instructions.
- MPDS starts with the dispatcher asking the caller some key questions that allow the dispatchers to categorize the call by chief complaint and defines a call identifier that includes:
  - (i) complaint
  - (ii) response type, and
  - (iii) urgency
- Software and manual modes of operation.

# MPDS – What's the Complaint?

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1. Abdominal Pain/Problems
2. Allergies (Reactions) / Envenomations (Stings, Bites)
3. Animal Bites / Attacks
4. Assault / Sexual Assault / Stun Gun
5. Back Pain (Non-Traumatic / Non-Recent)
6. Breathing Problems
7. Burns (Scalds) / Explosions
8. Carbon Monoxide / Inhalation / HAZMAT / CBRN
9. Cardiac or Respiratory Arrest / Death
10. Chest Pain
11. Choking
12. Convulsions / Seizures
13. Diabetic Problems
14. Drowning / Diving / SCUBA Accident
15. Electrocution / Lightning
16. Eye Problems / Injuries
17. Falls
18. Headache
19. Heart Problems / A.I.C.D.
20. Heat / Cold Exposure
21. Hemorrhage / Lacerations
22. Inaccessible Incident / Entrapments
23. Overdose / Poisoning (Ingestion)
24. Pregnancy / Childbirth / Miscarriage
25. Psychiatric / Suicide Attempt
26. Sick Person
27. Stab / Gunshot / Penetrating Trauma
28. Stroke (CVA) / Transient Ischemic Attack (TIA)
29. Traffic / Transportation Incidents
30. Traumatic Injuries
31. Unconscious / Fainting (Near)
32. Unknown Problem (Collapse 3rd Party)
33. Inter-Facility Transfer / Palliative Care
34. Automatic Crash Notification (A.C.N.)
35. HCP (Health-Care Practitioner) Referral (UK only)
36. Flu-Like Symptoms (Possible H1N1)
37. Inter-Facility Transfer specific to medically trained callers



# MPDS – Recommended Response

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- **Helps identify the potential severity of injury or illness based on information provided by the caller and the recommended type of response.**

Type	Capability	Response Time
Alpha	Basic Life Support	Cold (single unit)
Bravo	Basic Life Support	Hot (multiple units)
Charlie	Advanced Life Support	Cold (single unit)
Delta	Advanced Life Support	Hot (multiple units)
Echo	Advanced Life Support and special units	Hot (Multiple units) plus other first responders, e.g. FIRE, HAZMAT

# MPDS – Instructions to the caller

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- **Provides instructions for the dispatcher to give to the caller while assistance is enroute...**
  1. cardiopulmonary resuscitation for adults, children, babies, and newborns
  2. the use of a defibrillator
  3. the use of the Heimlich maneuver to clear the airway of a choking patient
  4. delivering a baby
  5. extinguishing the flames for a person on fire
  6. escaping from a sinking vehicle
  7. bleeding control
  8. flushing of chemical contamination
  9. cooling of burns
  10. Administering epinephrine/adrenaline autoinjectors
  11. administering Narcan/naloxone



ACME CAD

File View Misc

Medical

ANI / ALI

ACME case

Operator

Location

Phone

Caller Name

Problem

Phone Type

ProQA case

Date/Time

Dispatch code

CAD code

CAD Resp.

Case status

Change case

Notes Additional Info Descriptor KQ Query

Paragraph View List View

Paramount for Medical (5.0.0.673)

File View Spec Logs Options Go to Language Tabs Version About ProQA

1:44 :48

6: Breathing Problems

6-D-2

Entry KQ PD/CEI DLS Summary

Post-Dispatch Instructions Additional Information

a. I'm sending the **paramedics (ambulance)** to help you now. **Stay on the line** and I'll tell you **exactly** what to do next.

b. ( $\geq 1 + E-1$  or D-1, 2, 3) If there is a **defibrillator (AED)** available, send someone to get it **now** in case we need it later.

c. **(Patient medication requested and Alert)** Remind her to do what her **doctor has instructed** for these situations.

d. (Prescribed inhaler not yet used) Advise her to use the inhaler now.

e. (Special equipment/instructions not yet used) Advise her to use that treatment now.

DLS Links

a

b

c

Cindy W  
MPDS 12.2.100 2/7/2013  
1378

O: NAE  
C: NAE  
P: STD

89-year-old, Female, Conscious, Breathing. Code: 6-D-2:  
**DIFFICULTY SPEAKING BETWEEN BREATHS**

158 Herbert Ave, 364-4878

# What County Comm needs to know

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<b>WHERE?</b>	<b>Where are you? Where is the scene?</b>
<b>WHAT?</b>	<b>What happened?</b>
<b>WHO?</b>	<b>Who's involved? Is anyone hurt?</b>
<b>WHEN?</b>	<b>When did it happen? Is it going on right now?</b>
<b>WHY?</b>	<b>Follow-up questions...</b>

Ref: <https://www.sccgov.org/sites/911/Pages/The-Five-Ws.aspx>



# What County Comm needs to know

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## ***PEOPLE***

- How many people involved?
- Who is involved?
- What do they look like?
- What are they wearing?
- What are they carrying?

## ***WEAPON***

Any object can be a weapon if it is used in a threatening manner, or causes death or serious bodily injury.

- Name the specific weapon?
- Who has the weapon?
- Where is the weapon?

## ***WHERE DID THEY GO?***

- Point of reference.
- Directional guide.



# What are we specifically going to do?

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## Our focus

- **Call taking**
  - Call dispatching
  - Call status and updating
  - Event notes
  - Field unit status and tracking, and
  - Call resolution and disposition

***\*\* We will essentially be relaying the call \*\****





# Background

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## The Approach



1. Define the minimum information needed by County Comm for dispatch.
2. Automate the data collection process to speed the call taking process, reduce transcription errors, leverage the existing (packet) infrastructure, and deliver a 9-1-1 request to County Comm in a local format.

## We recognize...

1. The County Comm 9-1-1 training program is a 2 year training program before an operator can function independently.
2. We are not formally trained as 9-1-1 call takers.
3. We will not have the luxury of any interactive follow-up with dispatch once we transmit a request.
4. We do have a tool that can deliver what County Comm needs to dispatch a call.

# Our call taking process

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Process Steps	Who	Where	How
1. A resident arrives with a problem	Resident	Field	
2. Ask the right questions	CERT/RACES	Field	Alt911cts 
3. Create the message	CERT/RACES	Field	Alt911cts
4. Hand it off to the packet station	CERT/RACES	Field	Aoclient, Opdirect
5. Finish addressing the message	RACES	Field	Outpost
6. Transmit the message	RACES	Field	Outpost
7. Receive the message	RACES	PSAP	Outpost
8. Print it in the local format	RACES	PSAP	Alt911rpt 
9. Deliver the message	RACES	PSAP	Sneaker-net



# What's new

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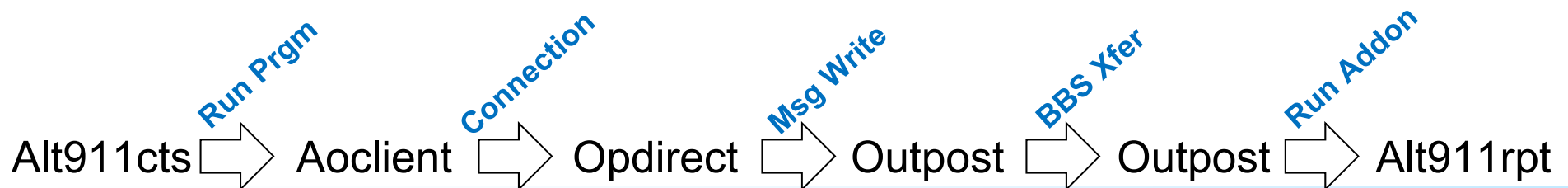
**Alt911** – an Outpost add-on program.

Computer Aided Call Taking System; manages the field-based message collection, hand-off, and printing of an Alternate 9-1-1 message. Consists of two programs:

**Alt911cts.exe** – interactive program that guides the call taking process.

**Alt911rpt.exe** – program that prints the message in the local format.

**Aoclient.exe** – An Outpost Add-on component; interfaces the Alt911cts to the rest of Outpost.

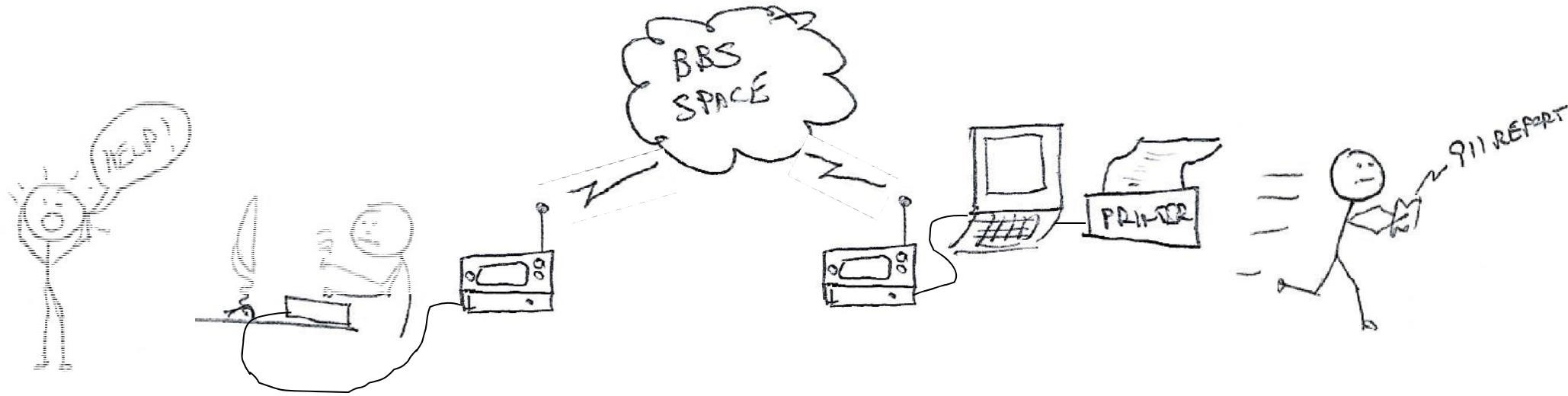


# The end to end message flow

Resident

RACES

RACES



Alt911cts  
Aoclient  
Opdirect  
Outpost

Outpost  
Alt911rpt



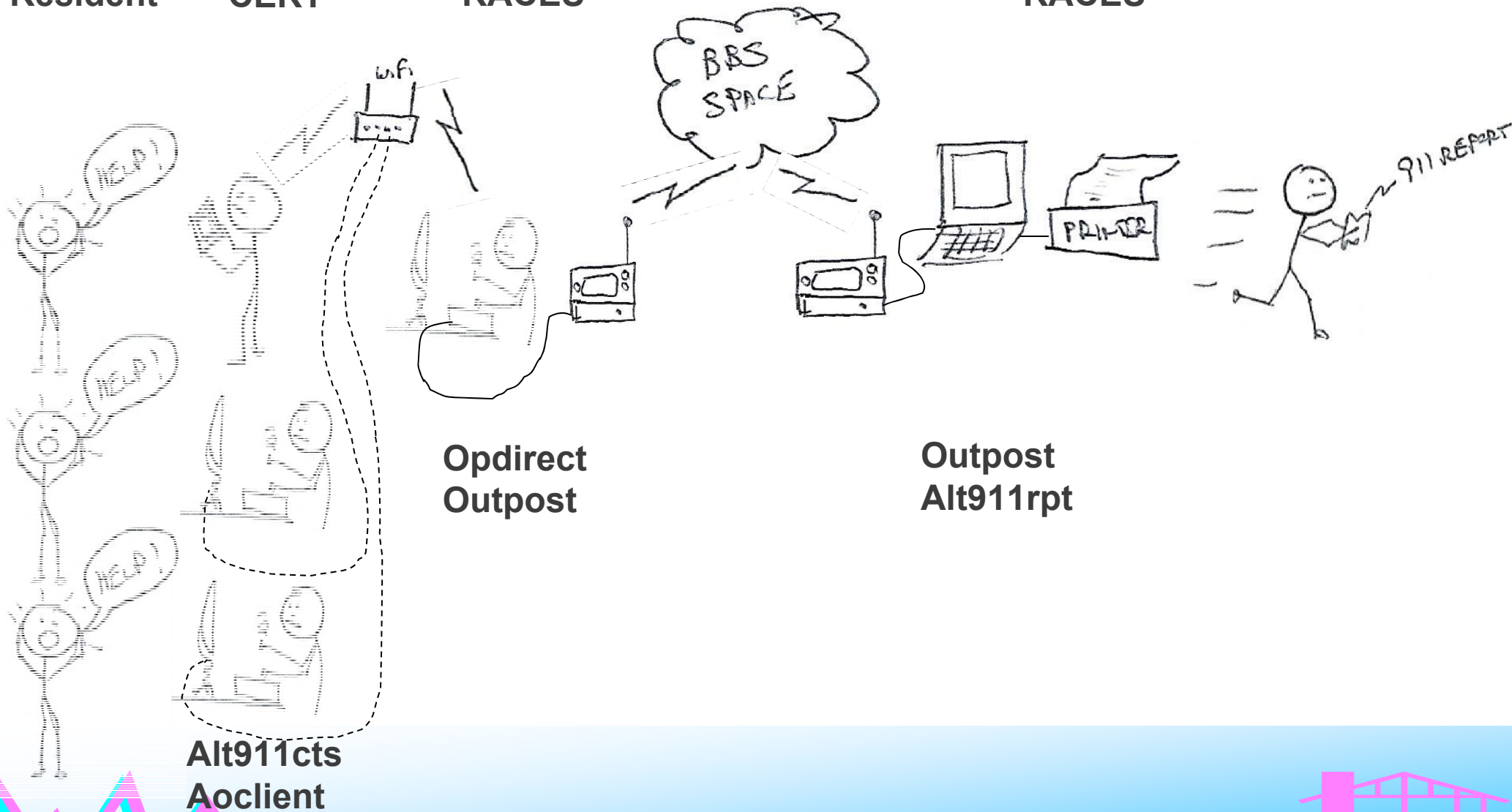
# The end to end message flow

Resident

CERT

RACES

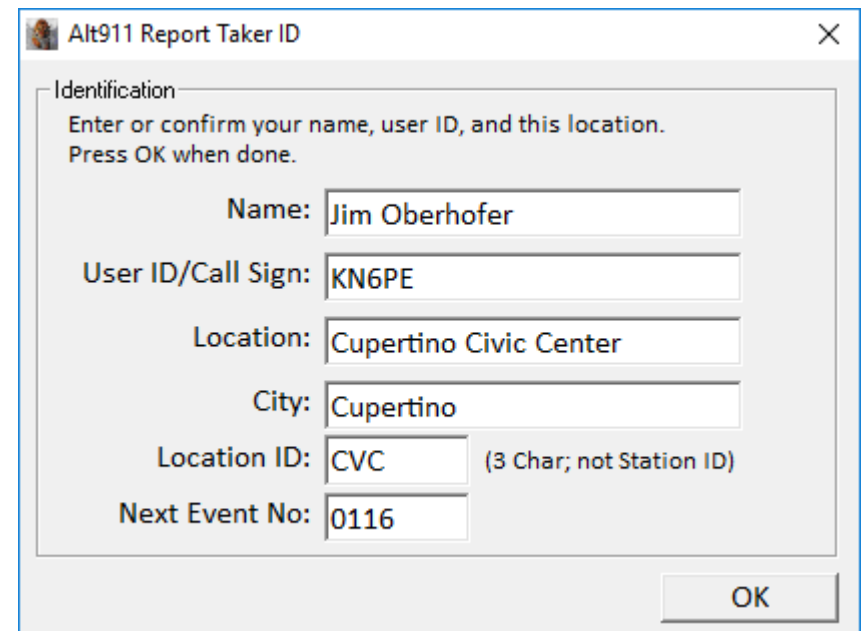
RACES



Cupertino ARES/RACES

# 1. Run Alt911cts

1. Find and run the program
2. The program opens, and the Identification screen opens
3. This describes who you are and where you are.
4. Press OK. A check will occur to make sure Alt911 can talk to the local Outpost instance.



Alt911 Report Taker ID

Identification  
Enter or confirm your name, user ID, and this location.  
Press OK when done.

Name:

User ID/Call Sign:

Location:

City:

Location ID:  (3 Char; not Station ID)

Next Event No:

OK

Alt911cts ➡ Aoclient ➡ Opdirect ➡ Outpost ➡ Outpost ➡ Alt911rpt





## 2. Alt911 main form

Alt911 Call Taking System v18.8.25

File Edit Setup Help

**New Report**

View List

Ready

Submitted

Draft

Deleted

All

Ready to Send

State	Event ID	Type	Issue	Location	City	Date / Time
Ready	CTC063.223	FIRE	Car Fire	304 My Street	Cupertino	03/04/18, 10:18
Ready	CTC063.224	FIRE	Transformer Fire	304 My Street	Cupertino	03/04/18, 10:19
Ready	CTC165.226	FIRE	House Fire	6904 West Maple Street	Cupertino	06/14/18, 11:44
Ready	WHL233.102	FIRE	Fire	West Elm	Cupertino	08/21/18, 14:02
Ready	WHL256.106	MED	Person Cant Get B...	124 East Main Street	Cuperti...	09/13/18, 19:58
Ready	WHL18256...	FIRE	House Fire	2387 Conner Street	Cupertino	09/13/18, 20:15

Name: Jim Oberhofer -- UID: KN6PE -- LOC: Cupertino Civic Center

16:11:36

Alt911cts ➡ Aoclient ➡ Opdirect ➡ Outpost ➡ Outpost ➡ Alt911rpt

Cupertino ARES/RACES

### 3. Taking a MED report (dispatches EMS)


Alt911 - New report

**New Report**

Event ID: CVC18304.116

Incident Summary

What are you reporting?



Location, Address:

City:

Other Location Details

Reporting Person Details

Name:

Address:


Phone:

Last seen:

Details:

**MEDICAL** | FIRE | LAW | LOCAL GOV |

Medical

 Age:

Gender:

Conscious? ☐ No ☐ Yes

Breathing? ☐ No ☐ Yes

16:12:47

# 3. Taking a MED report (dispatches EMS)



Alt911 - New report

**New Report**

Event ID: CVC18304.116

Incident Summary

What are you reporting?

☒ MED ☐ FIRE ☐ LAW ☐ LGOV

Location, Address:

City:

Other Location Details

Reporting Person Details

Name:

Address:

Phone:

Last seen:

Details:

**MEDICAL** | FIRE | LAW | LOCAL GOV |

Medical

Age:

Gender:

Conscious? ☐ No ☒ Yes

Breathing? ☐ No ☒ Yes

16:15:15

# 4. Sending it to the Packet station

The image shows two windows from a packet station interface. The left window, titled 'Aoclient EMS', displays the command line: `-a ALT911 -f "A911tf2345.tmp" -s "CVC18304.116 / MED / Cupertino"` and shows the status 'Logging in as ALT911' and 'Connected' at 16:15:59. The right window, titled 'CVC18304.116 / MED / Cupertino - Packet Message (145)', shows a 'Private Message' form with the following fields: Bbs: W3XSC-1, From: KN6PE, To: **XSC911, CUPEOC** (highlighted in red), and Subject: CVC18304.116 / MED / Cupertino. The message text area contains the following text:   
!ALT911!  
TYPE=MED  
LOC1=10185 N Stelling Road, Cupertino  
LOC2=Quinlan Rec Center  
RPNA=Benny Goodman  
RPAD=Same Address  
RPPH=408-435-5411  
DETL=Fell Out Of A Tree -- youngster was playing in a tree, lost his footing.=  
His name is Jeffery -- AGE: 10, C+ B+\nLast Seen:15 Minutes -- Call Loc:Cup=  
ertino Civic Center  
DEVD=KN6PE  
DATM=181031 1615  
EVNT=CVC18304.116  
!/ADDON!  
The status bar at the bottom of the right window indicates 'Subject line and message text fields are locked.' and shows a count of 380.

Alt911cts ➡ Aoclient ➡ Opdirect ➡ Outpost ➡ Outpost ➡ Alt911rpt

# 5. Receiving & printing

Alt911rpt v18.8.18

Print Preview Close

Starting up Alt911rpt, v18.8.18  
 Parsed Commands  
 -fdf => "C:\MyAddons\Alt911\Alt911-Form-Def.csv"  
 -ddf => "C:\MyAddons\Alt911\msg.d\CVC18304\_116 ~ MED ~  
 Cupertino.txt"

Form File found and loaded  
 Message text found and loaded

Preview

Close

Type: <b>MED</b>	Location: 10185 N Stelling Road, Cupertino					Unit:
<b>LAW</b>	Pri:	St:	SB:	Addr Addr: Quinlan Rec Center		Map:
<b>MED</b>	CD:	Zone:	EMD:	MPDS:	RP: Benny Goodman	Rp Phone: 408-435-5411
<b>FIRE</b>	LVL:	CD:	Run Cd:	Sta:	F-Jur: Same Address	Crit:
<b>LG</b>	LVL:	By:		Veh:	Lic:	Is:
C22C33			Details: Fell Out Of A Tree -- youngster was playing in a tree, lost his footing. His name is Jeffery -- AGE: 10, C+ B+ Last Seen: 15 Minutes -- Call Loc: Cupertino Civic Center			
At:		By:				
C4955						
At:		By:				
10-22						
At:		By:				
Dryrun:						
At:		Code:				
Date & TOC 181031 1615			Dev / DSN: KN6PE		Backed in By:	Mutaid RZ:
					Freq Assign:	Event #: CVC18304.116

ALT911rpt Version 1.0.42 -- 2/22/2018

Alt911cts ➡ Aoclient ➡ Opdirect ➡ Outpost ➡ Outpost ➡ Alt911rpt

Cupertino ARES/RACES

# Taking a FIRE report (dispatches County Fire)

Alt911 - New report

**New Report**

Event ID: CVC18305.119

Incident Summary

What are you reporting?

Location, Address:

City:

Other Location Details

Reporting Person Details

Name:

Address:

Phone:

Last seen:

Details:

MEDICAL | FIRE | LAW | LOCAL GOV

Fire

If a Fire: people inside?

12:30:39



# Taking a LAW report (dispatches the Sheriff)

Alt911 - New report

**New Report**

Event ID: CVC18304.117

Incident Summary

What are you reporting? Break-in

Location, Address:

City:

Other Location Details:

Reporting Person Details

Name:

Address:

Phone:

☐ Request Sheriff to contact me

Last seen:

Details:

MEDICAL | FIRE | LAW | LOCAL GOV

Law

Description of person (age, height, weight):

Weapon involved?

Direction of Travel:

Vehicle Description:

License Plate:  State

16:37:33

# Taking a LGOV report (send to the City for DPW)

Alt911 - New report

## New Report

Event ID: CVC18304.117 Delete Save Submit Close

Incident Summary

What are you reporting?

MED FIRE LAW **LGOV**

Location, Address:

City:

Other Location Details

Reporting Person Details

Name:

Address:

Phone:

☐ Request Sheriff to contact me

Last seen:

Details:

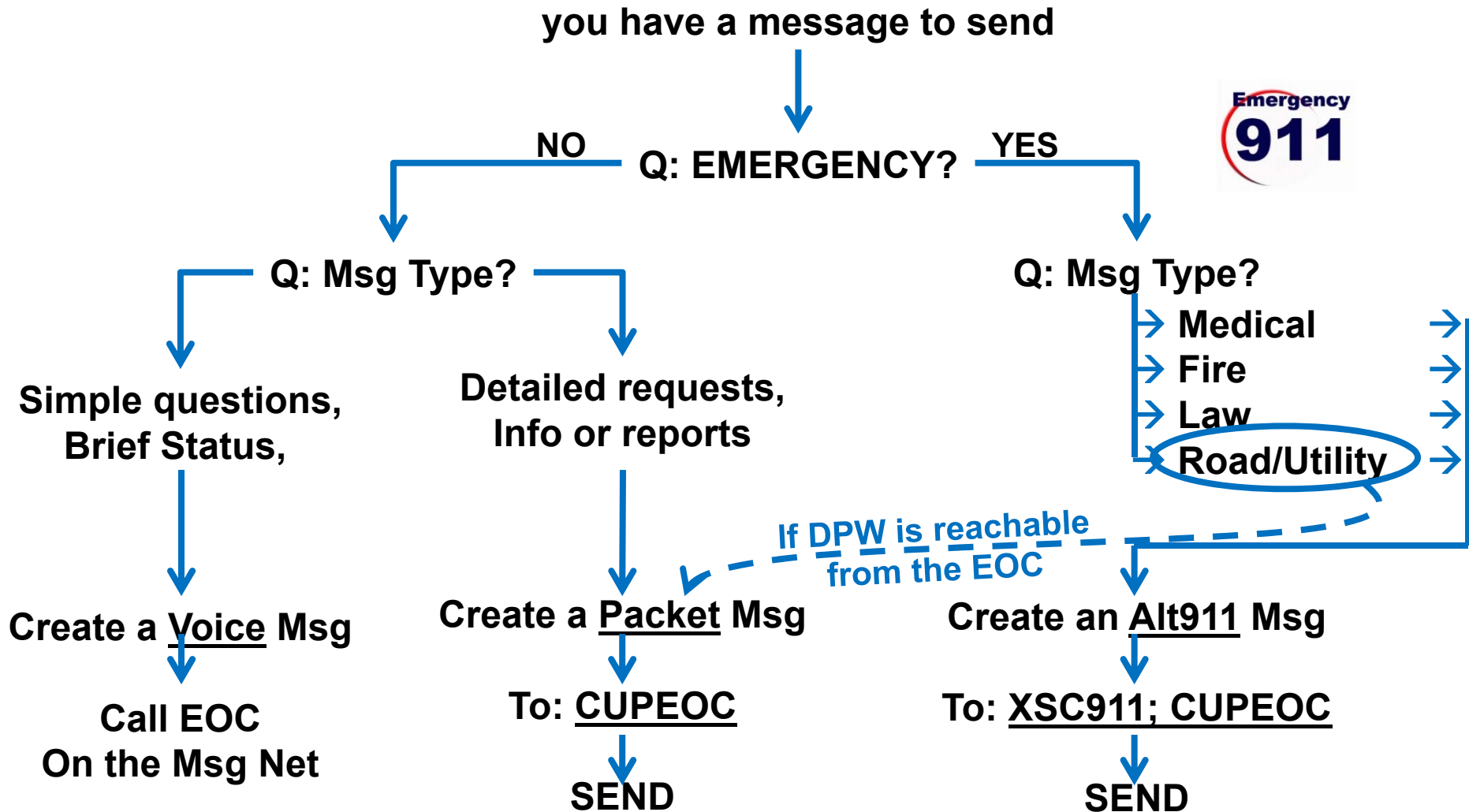
MEDICAL | FIRE | LAW | **LOCAL GOV**

Utilities

16:38:40

# ALT911 packet message passing

December 2018 Exercise



Bottom Line: Use your Judgement

Fxshuwr DUHVJDFHV

# 9-1-1 Field data collection form

## Instructions

1. Fill in the common area
2. Circle MED, FIRE, LAW, or LGOV (local gov't)
3. Fill in the respective fields depending on the type of incident
4. For a LAW incident, if the Reporting Person wants a call back, make sure to get a phone number.

## 9-1-1 Field Data Collection Form

<b>COMMON</b>	What are you reporting?		RP Name:	
	Location, Address		RP Address:	
	City:		RP Phone:	
	Other Location Details:			
	Time last seen? (HH:MM)			
	Event / Incident Details			
<b>MED</b>	Age:	Gender:	Conscious? (Yes/No)	Breathing? (Yes/No)
<b>FIRE</b>	If a FIRE, people inside?			
<b>LAW</b>	Person Description:			
	Direction of Travel:			Weapon Involved?
	Vehicle Description:		Lic:	State:
	RP Requests Contact? (Yes/No)			
<b>LGOV</b>	<no specific details required>			
Operator Use Only (do not transmit this section with the message):				
Action: Sent / Received (circle one)		Operator Call Sign: _____		
Method: Telephone / EOC Radio / Courier / Amateur Radio / Packet / Other		Operator Name: _____		
		Date/Time: _____		
CUP ICS 213-911 Field Data Collection Form				
v181115				

# Quick Start Doc

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## **Alt911**

**Alternate 9-1-1 Call Taking System  
An Outpost PMM Add-on**

Quick Start

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# Plan for 15-Dec-18 Exercise

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1. Get and install Alt911  
(<http://www.outpostpm.org/sccbeta.html>)
2. Review the Alt911 Quick Start guide (same link as above)
3. Practice Sessions...  
Saturday, 17-Nov, 9:00am to 12:00pm, EOC
4. Join us for the 15-December Earthquake exercise  
Details at the 6-Dec-18 General Meeting





# Thank you

*Any Questions?*

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