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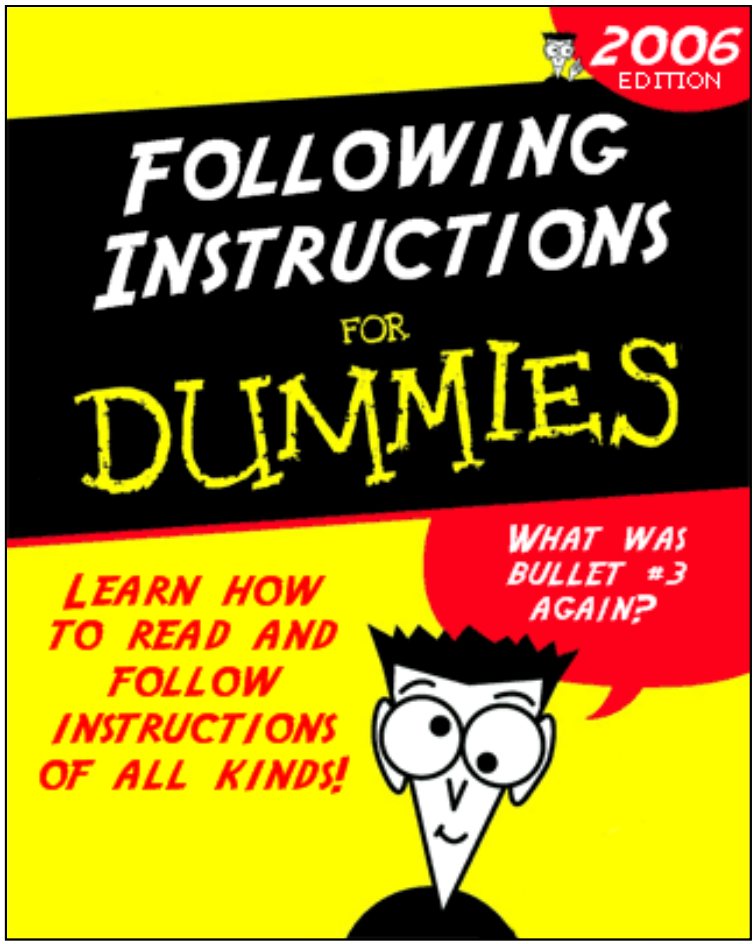
2018 Year End Summary, Update, Preview

Santa Clara County ARES®/RACES

Revised: 05-Dec-2018

Housekeeping

- Introductions
- Pen/pencil & paper
- Cell phones on silent or vibrate
- Side conversations
- Questions
- No food or drink in room
  - water only
- Breaks
- Restrooms
- In case of emergency



Agenda

- Training
- Field Operations
- Message Passing
- Net Control and Procedures
- Packet Networking
- County Wide Drill Recap
- SCCo Data Network Update
- Amateur Radio for Emergency Managers

Training

2018 Year End Summary, Update

Santa Clara County ARES®/RACES

Tim Howard, KE6TIM

Revised: 05-Dec-2018

2018 Review

- 63 hours of classroom training was offered
- 545 attendees (not including today's class)
- 34,335 contact hours
- 162 Unique Individuals
- Courses will continue to evolve and improve
  - Based on observations and changes to procedures
  - It is a good idea to retake a class every 2-3 years
  - Your feedback is important, please turn in course evaluations
- Please remove yourself from the course sign-up if your plans change
  - Free up a seat for someone else in large classes
  - Room size limitations

2018 Review

- Additional Field Ops and Message Passing Classes
  - Now offered twice each year
  - Pre-requisite for other classes

- Created video training on ICS-214 Unit Activity Log
  - Other forms to consider: 211, 205, 309, ??
  - What are your thoughts?

2019 Training Schedule

Day	Date	Course	Instructor
Sat.	January 5	Field Ops Type III Part A	Fox
Sat.	February 9	Field Ops Type III Part B & Type II	Fox
Sat.	February 2	Net Control Type III Part A	Laubach
Sat.	March 2	Net Control Type III Part B	Laubach
Sat.	April 6	Net Control Type II	Laubach
Sat.	May 4	Message Passing	McKee
Sat.	June 1	Event Planning Type I	Howard
Sat.	July 13	Field Ops Type III Part A	Fox
Sat.	July 20	Field Ops Type III Part B & Type II	Fox
Sat.	August 3	Shadowing	Howard
Sat.	September 7	Packet Type III Part A	Oberhofer
Sat.	September 21	Cross Band Repeat / Antenna Fund.	Ott
Sat.	October 5	Packet Type III Part B	Oberhofer
Sat.	November 2	Packet Type II	Oberhofer
Sat.	November 16	Message Passing	McKee
Sat.	December 14	Year End Summary	County Staff

2019 Training Schedule

Day	Date	Course / Location		Instructor	
Sat.	Feb. 9	Intro to EmComm	(Cupertino)	Halchin	
Sat.	Mar. 9	Fund. of EmComm	(Cupertino)	Halchin	
Wed.	June 14	Intro to EmComm	(Sunnyvale)	Howard	NIGHT CLASS
Wed.	July 12	Fund. of EmComm	(Sunnyvale)	Howard	NIGHT CLASS
Wed.	Oct. 9	Intro to EmComm	(Mtn. View)	TBD	NIGHT CLASS
Wed.	Nov. 13	Fund. of EmComm	(Mtn. View)	TBD	NIGHT CLASS

www.scc-ares-races.org/training.html

Theory vs Practice

- Learning is more than just attending a class
  - Focus of the classroom is on theory/procedures
  - Practice is hands on experimentation

- Just like lecture vs. lab in college, both are needed to learn the subject

LECTURE LAB

On-Air Message Passing Practice

- Use the time allocated to the Training Net
- Monthly on 3rd Tuesday
- Resource Net Repeaters will be linked

  AA6BT 146.115, N6NAC 444.625, W6ASH 440.800
- Initial session will be a demo
- Everyone encouraged to copy the messages (ICS-213)
- Future sessions will be more interactive with participants
- First one on Tuesday, December 18th, 8:30pm

Packet performance differences noted between weekly Mon. & Tues. practice sessions and performance at drills

Pop-Up Packet Practice

- Provide an opportunity to test equipment in a deployed environment
- Morning activity in probably a park
- Participation is quick and easy.
  - Travel to the pop-up packet location
  - Set up your station, send/receive a few messages (less than 1 hour)
  - Pack up your station
  - Be home for lunch
- No AC Power, No Generators. Should be able to run 1 hour on batteries.
- Mentors available to assist
- Saturday, April 13, 2019
- Opportunities for P3 & P2 evals and MAC Credit.

Theory, Practice plus Experience

- Theory and Practice get you most of the way
- You master the subject by getting experience

2019 Activities

Day	Date	Description	
Sat.	February 23	City/County Drill	10 am -12 pm
Sat.	April 13	Pop-Up Packet Practice	Morning
Sat.	May 18	City/County Drill	10 am -12 pm
Sat.	August 10	Radio Direction Finding Mini-Drill	Morning
Sat.	August 17	City/County Drill	10 am -12 pm
Sat.	TBD	Annual County Wide Exercise	All Day

Additional Public Service Events
Additional events in your city

www.scc-ares-races.org/activities/

Field Operations

2018 Year End Summary, Update

Santa Clara County ARES®/RACES

Michael Fox, N6MEF

Revised: 05-Dec-2018

New ICS 205 Communications Plan Format

Front

COMMUNICATIONS PLAN SCCo ARES/RACES/ACS	1. Incident Name/Location	2. Activation Number	3. Operational Period Date/Time From Date: To Date: From Time: To Time:

4. Communications Resources

Ch #	Function	Call Sign and/or Sys / Net / Ch / TG Name	Assignment	Rx Freq N / W	Rx Tone or NAC	Tx Freq N / W or + / - / S	Tx Tone or NAC	Mode A,D,M	Remarks

5. Special Instructions

ICS 205 SCCo RACES	6.Prepared by (Communications Unit Leader)	7.Prepared Date/Time	8. Page of

See reverse for instructions. All channels are shown as if programmed in a base station, mobile or portable radio. Repeater stations must be programmed with the Rx and Tx reversed.

ICS 205-SCCo ARES/RACES/ACS (rev. 2018-Jul-09)

Instructions on Back

ICS 205
Communications Plan, Adapted for Santa Clara County ARES/RACES/ACS

Purpose: The Communications Plan (ICS 205) provides information on all radio frequency or trunked radio system talkgroup assignments for each operational period. The plan is a summary of information obtained about available radio frequencies or talkgroups and the assignments of those resources by the Communications Unit Leader or Incident Commander for use by incident responders.

Preparation: The ICS 205 is prepared by the Communications Unit Leader or other individual designated by the Incident Commander.

Distribution: The ICS 205 is provided to all incident responders.

#	Block Title	Instructions
1	**Incident Name/Location**	Enter the name assigned to the incident and, optionally, the location of the incident.
2	**Activation Number**	Enter the activation number assigned to the incident, otherwise leave blank if none.
3	**Operational Period Date/Time**	Enter the start date (mm/dd/year) and time (24-hr clock) and the end date and time for the operational period to which the form applies.
4	**Communications Resources**	Enter the following information about radio channel use:
	Ch #	Use at your discretion. Channel number (Ch #) may equate to channel numbers in pre-programmed incident radios, used as reference numbers on the ICS 205 document, or left blank for recipient use.
	Function	Enter the ICS or local function for which this channel will be used (Operations, Command, Logistics, Resource, Tactical, Emergency, etc.)
	Call Sign and/or Sys / Net / Ch / TG Name	Enter the call sign of the repeater or station (if appropriate) and the system, net, channel or talkgroup name by which this channel is commonly known.
	Assignment	Enter the individual(s), group(s), or function(s) that will be the primary users of this channel.
	Rx Freq N / W	Enter the Receive Frequency (Rx Freq) as the mobile or portable subscriber would be programmed, followed by "N" for narrrowband or a "W" for wideband emissions. For HF, include USB or LSB, as appropriate.
	Rx Tone or NAC	Enter the Receive Continuous Tone Coded Squelch System (CTCSS) subaudible tone (Rx Tone) or Network Access Code (Rx NAC) for the receive frequency as the mobile or portable subscriber would be programmed.
	Tx Freq N / W or + / - / S	Enter the Transmit Frequency (Tx Freq) as the mobile or portable subscriber would be programmed, followed by "N" for narrrowband or a "W" for wideband emissions. For HF, include USB or LSB, as appropriate. Alternatively, for repeaters using standard amateur frequency offsets (e.g. 600 Hz for 2m, 5 MHz for 70cm), enter "+" or "-" as appropriate. Enter "S" if Rx Freq represents a simplex frequency.
	Tx Tone or NAC	Enter the Transmit Continuous Tone Coded Squelch System (CTCSS) subaudible tone (Tx Tone) or Network Access Code (Tx NAC) for the transmit frequency as the mobile or portable subscriber would be programmed.
	Mode A,D,M	Enter "A" for analog, "D" for digital, or "M" for mixed mode operations. If needed, enter specific mode type (D-Star, DMR, etc.) in Remarks.
	Remarks	Enter miscellaneous information related to the channel.
5	**Special Instructions**	Enter any special instructions or other emergency communications needs.
6	**Prepared By (Comm Leader)**	Enter the name and FCC call sign of the person preparing the form.
7	**Prepared Date/Time**	Enter date prepared (mm/dd/year) and time prepared (24-hr clock).
8	**Page**	Enter the page number and number of pages.

ICS 205-SCCo ARES/RACES/ACS (rev. 2018-Jul-09)

https://www.scc-ares-races.org/operations.html#forms

New ICS 205 Format

COMMUNICATIONS PLAN SCCo ARES/RACES/ACS		1. Incident Name/Location			2. Activation Number		3. Operational Period Date/Time From Date: To Date: From Time: To Time:		
4. Communications Resources									
Ch #	Function	Call Sign and/or Sys / Net / Ch / TG Name	Assignment	Rx Freq N / W	Rx Tone or NAC	Tx Freq N / W or + / - / S	Tx Tone or NAC	Mode A,D,M	Remarks

- Aligned with default format from FEMA
- Function, Call Sign, Assignment similar to previous form
- Separate RX vs. TX information
  - For standard repeater offsets, a “+” or “-” is sufficient; or “S” for simplex
  - Useful for non-standard offsets, different input vs. output tones, …
  - Multi-agency (non-hams may not know our standard offsets)
- “Mode” field accommodates increased digital voice options
- “Remarks” and “Special Instructions” (at bottom) fields clarify and provide flexibility

2019 Changes to Field Ops Class

- 2018 included more information, but too much for 3 hours
- 2019 splits the class into its original two parts
  - Field Operations Type III, Part A
  - Field Operations Type III, Part B and Type II
- More time for discussion, interaction, exercises

Message Passing

2018 Year End Review, Update

Santa Clara County ARES®/RACES

Don McKee, KE6DM

Revised: 02-Dec-2018

What does it take to be a great Message Passer?

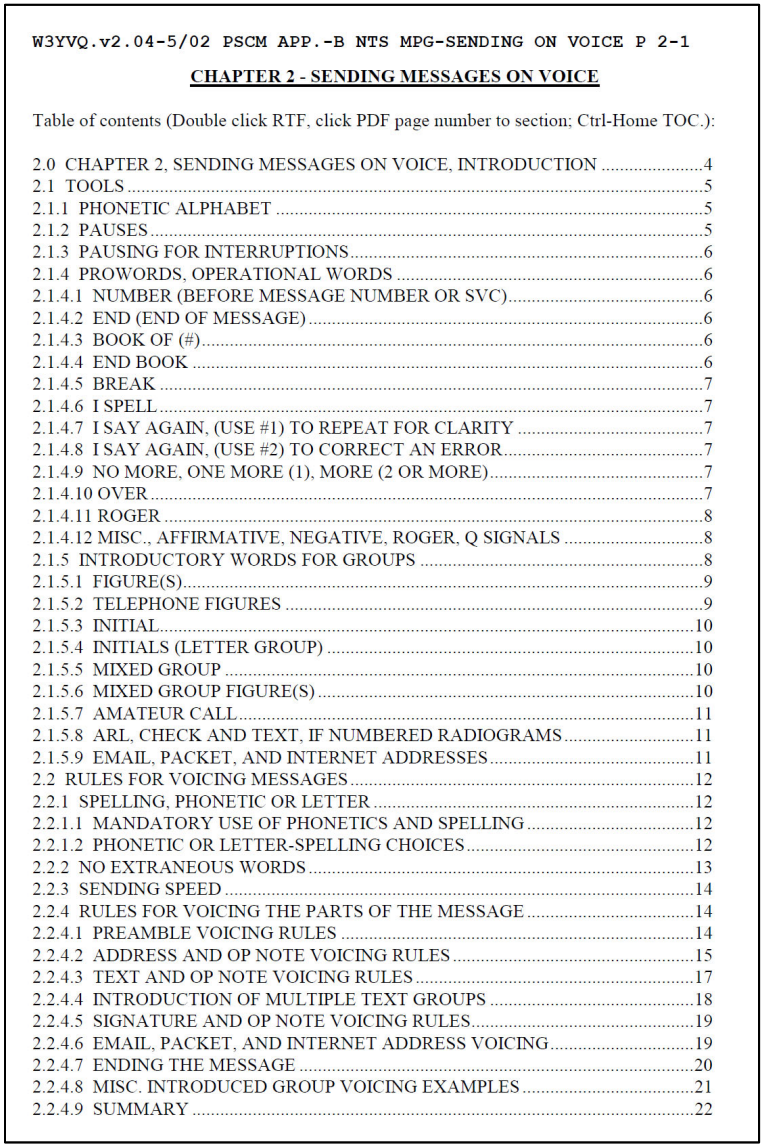
- You need to be a great communicator,
  - com·mu·ni·cate: to transmit information, thought, or feeling so that it is satisfactorily received or understood
- Who is able to communicate *precisely*,
  - pre·cise·ly: 1. in a precise manner 2. exactly
- Using a shared, standard procedure, that EVERYONE is trained to use,
- While following instructions!

Message Passing Fundamentals

The building blocks of the message passing process

Follow the NTS Manual (plus SCCo changes)

- Most of what we will cover comes from the ARRL NTS manual
  - Chapter 2 – Sending Messages on Voice
  - Print it out; keep it in your go kit; refer to it often
  - Look for "[NTS-x.x.x]" section numbers
- A (very) few NTS procedures don't fit RACES situation where the message author and recipient are not radio operators
  - Example: "X" for end of sentence
- Santa Clara County RACES additions and/or exceptions adjust for our environment (FM simplex or repeaters) and fill in missing procedures
  - Punctuation, symbols, GPS coords, …



W3YVQ.v2.04-5/02 PSCM APP.-B NTS MPG-SENDING ON VOICE P 2-1

CHAPTER 2 - SENDING MESSAGES ON VOICE

Table of contents (Double click RTF, click PDF page number to section; Ctrl-Home TOC.):

Intro Proword: Figure(s)

[NTS-2.1.5.1]

- Identifies one or more numerals to follow
- Voice each digit separately
- A "." is voiced "DECIMAL"
- A preceding "-" is voiced "MINUS"

- Examples:
  - Written: Send 12 dozen jelly donuts right away
  - Spoken: "Send FIGURES ONE TWO <pause> dozen jelly donuts right away"

  - Written: Switch to frequency 146.115
  - Spoken: "Switch to frequency FIGURES ONE FOUR SIX DECIMAL ONE ONE FIVE"

  - Written: The temperature will dip to -10
  - Spoken: "The temperature will dip to FIGURES MINUS ONE ZERO"

Intro Proword: Figure(s)

[NTS-2.1.5.1]

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Punctuation

- In SCCo RACES we handle punctuation differently than the ARRL NTS manual because the people creating and receiving the message are not other radio operators
  - Period
    - Written: “.” at the end of a sentence, is not written as a separate group.
    - Spoken: “period”
  - Question Mark
    - Written: “?”, commonly at the end of a sentence, is not written as a separate group.
    - Spoken: “question mark”
  - Colon
    - Written: “:”, often in an internet address, is not written as a separate group.
    - Spoken: “colon”
  - Semicolon
    - Written: “;” within a sentence, is not written as a separate group.
    - Spoken: “semicolon”

Symbols

- The NTS manual does not cover how to voice many symbols. SCCo RACES will adopt the following standard:
  - "/" is spoken "slash"
    - Example: "… and/or …" is spoken "… mixed group alpha november delta SLASH oscar romeo …"
  - "\" is spoken "backslash"
    - Example: "… PasW\d1 …" is spoken "… mixed group uppercase papa lowercase alfa sierra uppercase whiskey BACKSLASH lowercase delta one …"
  - "+" is spoken "plus"
    - Example: "… +1-408-867-5309 …" is spoken "… telephone figures PLUS one <pause> four zero eight <pause> eight six seven <pause> five three zero niner …"
  - "-" depends on the context
    - "-" is spoken "minus" as part of a number
      - Example: "… -123 …" is spoken "… figures MINUS one two three …"
    - "-" is spoken "dash" when used as a dash
      - Example: "… w2xsc-1 …" is spoken "… mixed group whiskey two x-ray sierra charlie DASH one …"

Symbols (cont.)

- Voicing of "." is context dependent:
  - At the end of a sentence, "." is spoken "period"
    - Example: "… Bring food. …"
    - Spoken : "… bring food PERIOD …"
  - In a number, "." is spoken "decimal"
    - Example: "… 146.475 …"
    - Spoken: "… figures one four six DECIMAL four seven five …"
  - In an email, packet, or internet address, "." is spoken "dot"
    - Example: "… joe@host.com …"
    - Spoken : "… email address juliet oscar echo atsign hotel oscar sierra tango DOT charlie oscar mike …"

Symbols (cont.)

- Here are some more:
  - "=" is spoken "equal"
    - Example: "… beds = 5; tarps = 10; …"
    - Spoken : "… beds mixed group EQUAL figure 5 semicolon tarps mixed group EQUAL figures one zero semicolon …"
  - "&" is spoken "ampersand"
    - Example: "… contact AT&T …"
    - Spoken : "… contact mixed group alfa tango AMPERSAND tango …"
    - Example: "… staging near Main & Park …"
    - Spoken: "… staging near main mixed group AMPERSAND park …"
  - "_" is spoken "underscore"
    - Example: "… map_201802.pdf …"
    - Spoken: "… mixed group mike alfa papa UNDERSCORE two zero one eight zero two dot papa delta foxtrot …"

Message Passing Prowords

- Prowords are special words used to facilitate message passing by voice
- They are NOT written into the message
- Prowords can be grouped into four categories, depending on how they are used:
  - **Operational/Control Prowords**
    - Define the start, end, or control the flow of the message
  - **Clarification Prowords**
    - Always spoken after a group
    - Clarifies or emphasizes what was just said
  - **Qualification Prowords**
    - Used within a group
    - Defines a quality to allow precise copy
  - **Introductory Prowords**
    - Always spoken before a group
    - Alerts receiving operator to what is coming next
- It is important to use each of them in the right place to avoid confusing the recipient and slowing down the message transfer

Qualification Prowords

- Always spoken WITHIN a group
  - Typically previously identified with an Introductory Proword
- Alerts the receiving operator to a special quality for the character(s) that follows
  - Allow precise copy, such as case-sensitive information (web addresses, passwords, chemical names, etc.)
- Implies that the following characters are going to be sent one character at a time, phonetically
- Remains in effect for group until over-ridden
  - Like the “Caps Lock” key on your keyboard

Qualification Proword Examples

- "UPPERCASE" and "LOWERCASE"
  - Used to indicate that following characters should be copied in in the appropriate case
  - Used with ONE GROUP AT A TIME
  - Remain in effect until the end of the group or until over-ridden by another Qualification Proword (think "caps lock")
  - Most of the time case doesn't matter, but other times it's critical (e.g. passwords, internet addresses)
- Examples:
  - Written: The password is passWORD
  - Spoken: "The password is password I spell LOWERCASE papa alfa sierra sierra UPPERCASE whiskey oscar romeo delta"
  - Written: Deliver 1 LiFePO4 battery
  - Spoken "deliver figure one mixed group UPPERCASE lima LOWERCASE india UPPERCASE foxtrot LOWERCASE echo UPPERCASE papa oscar four battery"

Intro Proword: GPS Coordinates

- Identifies a set of GPS coordinates to follow
- Used when a set of numbers contain one or more of the coordinate "marker" symbols:
  - ° (degrees), ‘ (minutes), “ (seconds)
  - N (north), S (south), E (east), W (west)
- Voice the "marker" symbols where they appear
  - But don't add them, if not already part of written message.
- ~~Include the word "AND" between the latitude and longitude parts.~~
- Send as a single group, even if written across multiple "slots"
  - You may need to make adjustments to fit the "5 words at a time" rule
- If the numbers *look like* coordinates, but don't contain any "marker" symbols, just send them as FIGURES.

Intro Proword: GPS Coordinates (cont.)

- Examples:
  - Written: 41° 24.20', 2° 10.44'
  - Spoken: "GEE-PEE-ESS COORDINATES four one DEGREES <pause> two four decimal two zero MINUTES comma <pause> two DEGREES <pause> one zero decimal four four MINUTES"

  - Written: 41°24'12.2"N 2°10'26.5"E
  - Spoken: "GEE-PEE-ESS COORDINATES four one DEGREES <pause> two four MINUTES <pause> one two decimal two SECONDS NORTH <pause> two DEGREES <pause> one zero MINUTES <pause> two six decimal five SECONDS EAST"

Intro Proword: Internet Address [NTS-2.2.4.6]

- Indicates an internet (e.g. “web”) address follows
  - <scheme>://<hostname[:port]>/<path>[?<query>]
    - https://www.google.com/
    - ftp://some.host.com:21/
    - http://qrz.com/The/Path/index.htm?name=Herman&call=W6XRL4

- Everything after <hostname> is case-sensitive!

- Example:
  - Written: http://www.scco.org/ops.html#GoKit
  - Spoken: “INTERNET ADDRESS hotel tango tango papa colon slash slash whiskey whiskey whiskey dot sierra charlie charlie oscar dot oscar romeo golf slash lowercase oscar papa sierra dot hotel tango mike lima poundsign uppercase golf lowercase oscar uppercase kilo lowercase india tango”

Agency Forms and Informal Messages

Critical Information to Capture …

As the operator passing the message, always include:

- Your message number
- Their message number
  - Log "N/A" if they don't have one
- Message handling order
  - Municipal Status default = Immediate
  - EOC-213RR default = Priority
  - Otherwise, default = Routine
- "To" Position & Location
  - Default = Planning
    - Includes Municipal Status and 213RR
- "From" Position & Location
- How message was transmitted
  - Sent vs. Received
  - Amateur Radio, Telephone, Packet, etc.
- Your name and FCC call sign
- Date and time message was transmitted

Other information should only be included if already on the form

- For example, message creation date/time, situation severity, reply actions, etc.
- Don't make stuff up!

Net Control

2018 Year End Summary, Update

Santa Clara County ARES®/RACES

Mark Laubach, K6FJC

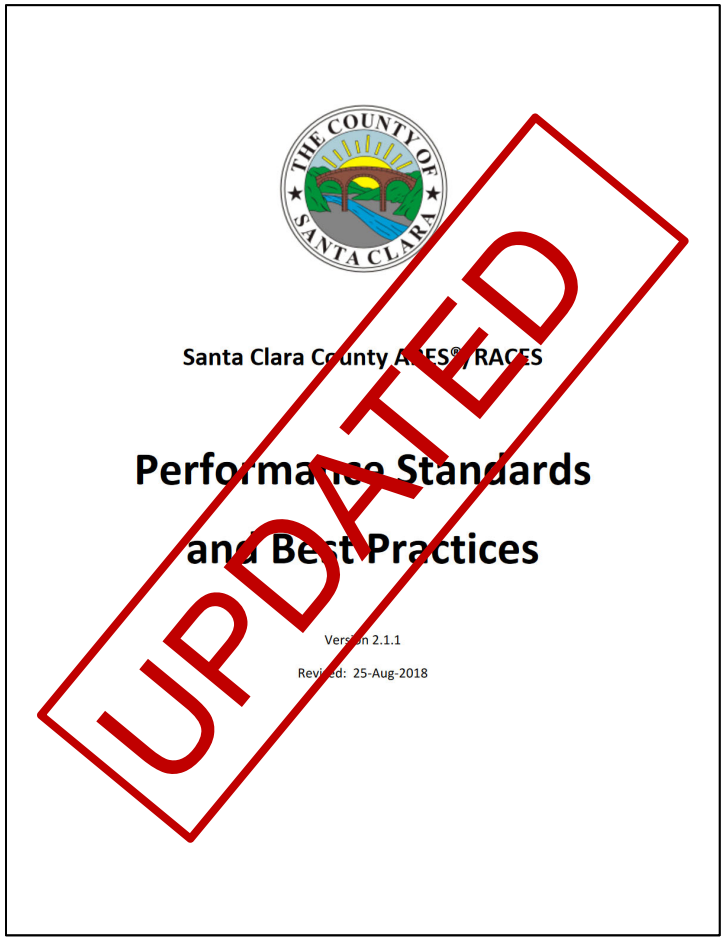
Revised: 05-Dec-2018

2018 Net Control Year End

- No changes felt from California AB 1222 (aka AB 1785, Section 23123.5(f) CVC) and our mobile ham radio use
  - We will continue Travel Tracking Net and H&W checks as we modified from last year
  - https://www.scc-ares-races.org/operations.html
- Repeat focus request from 2017 year end: improve efficiency
  - Root cause ⇒ need better following of SCC message passing and use of prowords
    - Please study up – it does take practice
    - Our drills are ”dress rehearsals” for the real thing, not the time to start practicing
  - NCO efficiency
    - Find ways to not repeat the same information
    - Remember to allow sufficient pauses, especially Resource Net Level 3 Travel Tracking

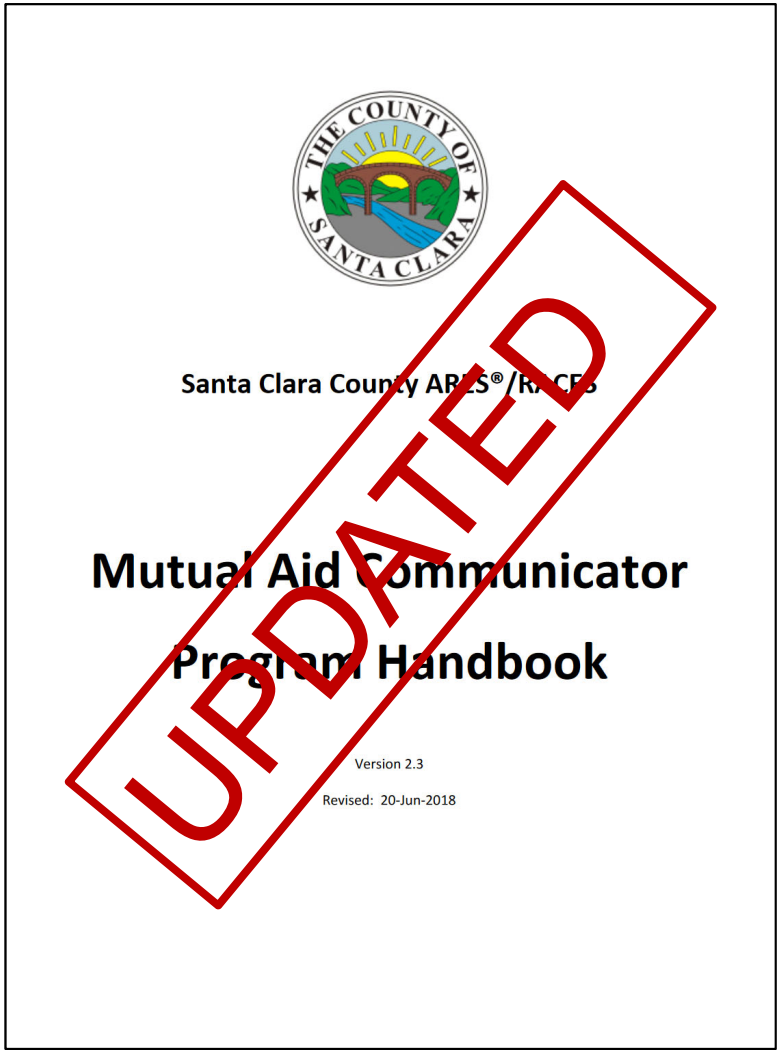
Performance Standards and Best Practices

- Updates included:
  - Remove conflicting requirements on clothing
  - Updated procedure for switching nets
  - Requires ANSI Class 2 safety vest
  - Clarified Handling Order options
  - Maps (paper or offline)



http://www.scc-ares-races.org/operations.html

Mutual Aid Communicator Program



- Updates included:
  - N2, P2: higher power radio
  - F2, N2, S2: cross-band repeat
  - All Type 1: Event planning class
  - Loss/reinstatement process
  - NIMS credentialing

http://www.scc-ares-races.org/operations.html

Packet Network Update

2018 Year End Review,
2019 Update

Santa Clara County ARES®/RACES
Jim Oberhofer
Revised: 02-Dec-2018

Packet Training

Review

2018 Packet Classes

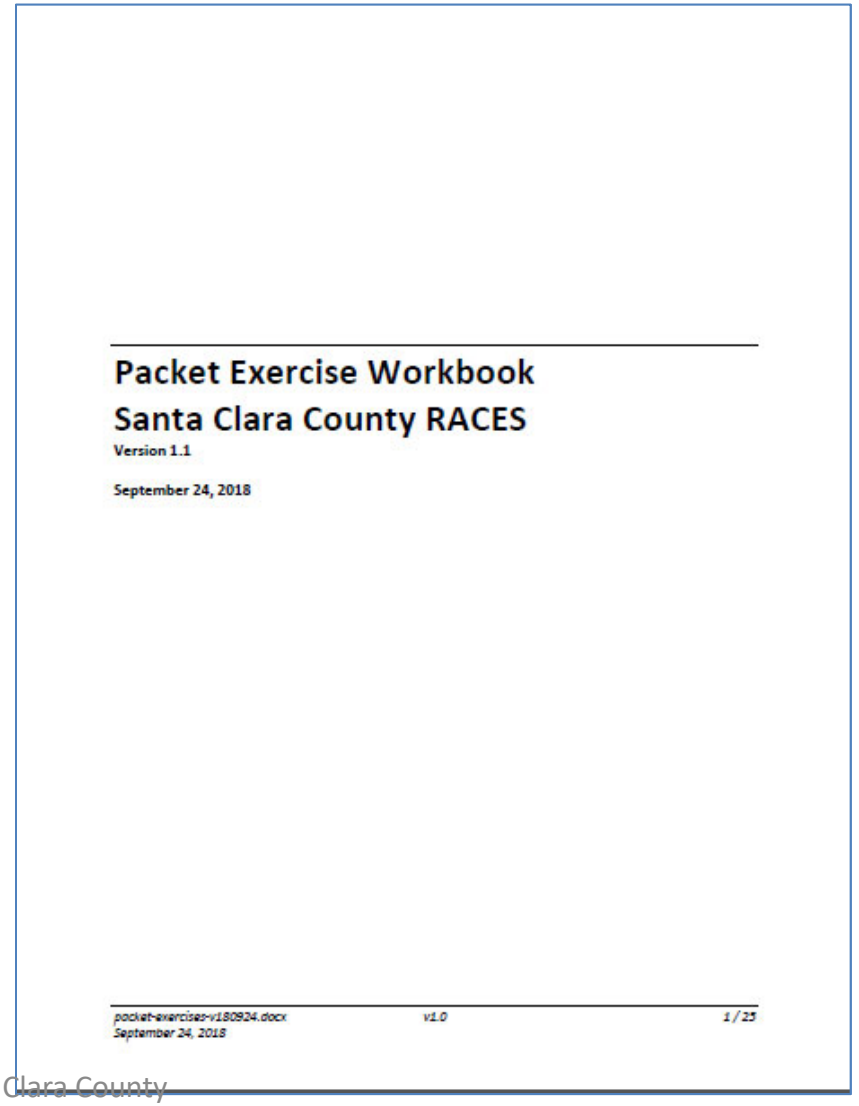
By the numbers

- 318 classroom hours spent (not counting homework)
- 116 class sign-ups (all 3 classes)
- 106 class show-ups
  - 46 in Packet III-A
  - 35 in Packet III-B
  - 25 in Packet II
- 57 unique participants
- 24 packet Ops attended only one class
- 17 packet Ops attended only two classes
- 16 packet Ops attended all three classes

Packet Exercise Workbook

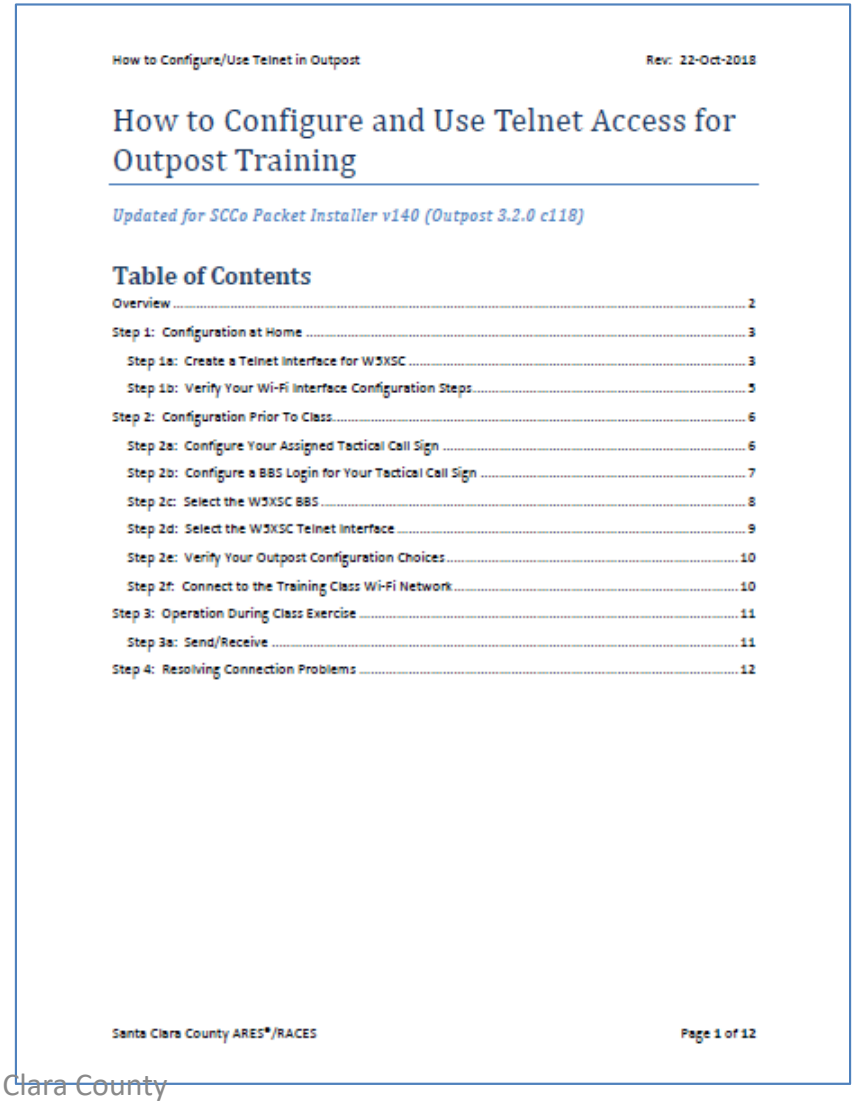
- Covered Packet III-B content
- Included related topics such as…
  - Checking out your packet station
  - Working with messages
  - Customizing message handling
  - And other topics, such as:
    - ICS 309 Reporting
    - Using Address Books
    - Message Addressing

- Watch for updates to the Exercise Workbook


Packet Exercise Workbook
Santa Clara County RACES
Version 1.1
September 24, 2018
packet-exercises-v180924.docx v1.0 1 / 25
September 24, 2018

Using Telnet Access for Outpost Training

- Required for Packet III-B and Packet II class *if* you have a Laptop but not a TNC & Radio.
- Full instructions on configuring Outpost to access the W5XSC Training BBS.



How to Configure/Use Telnet in Outpost Rev: 22-Oct-2018

How to Configure and Use Telnet Access for Outpost Training

Updated for SCCo Packet Installer v140 (Outpost 3.2.0 c118)

Table of Contents

Santa Clara County ARES®/RACES Page 1 of 12

Weekly Packet “Practice”

By the Numbers (through 26-Nov)

	Monday	Tuesday	Total
Total Practice Messages sent	821	1295	2116
% Practice Messages sent	38.8%	61.2%	100.0%
% Correct all the time	92.9%	93.5%	93.2%
Average # of Participants / Night	23	28	25.5

Weekly Packet "Practice"

Q: When is a check-in not a check-in?

A: When it is "practice"

- See the "*Standard Packet Check-In/Out Message*" App Note under…
  https://www.scc-ares-races.org/data/packet/index.html#app-notes

- See the *Practice Message, Subject* section under…
  https://www.scc-ares-races.org/data/packet/weekly-packet-practice.html#Message

Outpost & PacFORMS

Review

SCCo Installer v140 – August 2018

By the numbers

- 45 Total changes
- 26 SCCo Submitted
- 23 Enhancements
- 21 Defects

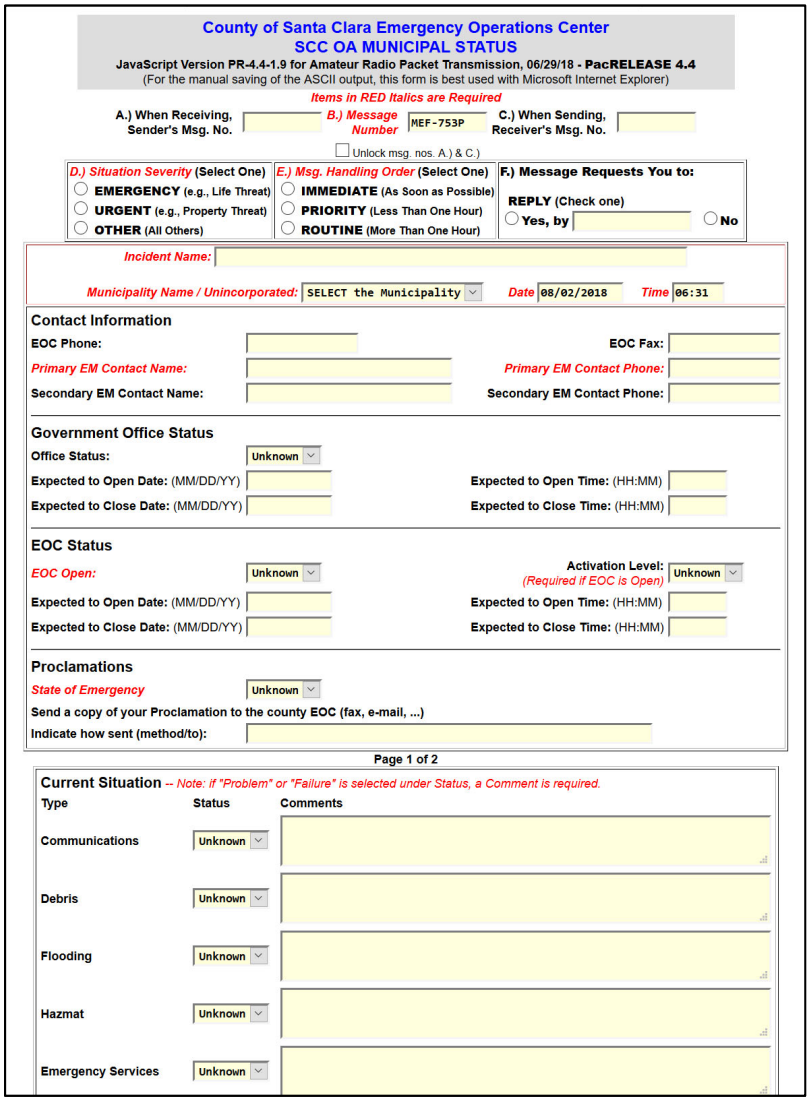
These were related to

13 - Message Handling
8 - PacFORMs
7 - Add-on related
3 - Send/Receive
2 - Subject Line related
2 - printer related
… plus another 10 changes

- See the details up on the SCCo RACES website…
  Packet BBS Service > ***Presentations*** > ***2018*** > SCCo Packet Installer v139 Summary

New OA Municipal Status Form

- Managing information in their terms
- New Operational Area Municipal Status Form replaces the City Scan form



County of Santa Clara Emergency Operations Center
SCC OA MUNICIPAL STATUS
JavaScript Version PR-4.4-1.9 for Amateur Radio Packet Transmission, 06/29/18 - **PacRELEASE 4.4**
(For the manual saving of the ASCII output, this form is best used with Microsoft Internet Explorer)

Items in RED Italics are Required

A.) When Receiving, Sender's Msg. No. | *B.) Message Number* MEF-753P | C.) When Sending, Receiver's Msg. No.

Unlock msg. nos. A.) & C.)

D.) Situation Severity (Select One)
- EMERGENCY (e.g., Life Threat)
- URGENT (e.g., Property Threat)
- OTHER (All Others)

E.) Msg. Handling Order (Select One)
- IMMEDIATE (As Soon as Possible)
- PRIORITY (Less Than One Hour)
- ROUTINE (More Than One Hour)

F.) Message Requests You to:
REPLY (Check one)
- Yes, by
- No

Incident Name:

Municipality Name / Unincorporated: SELECT the Municipality | *Date* 08/02/2018 | *Time* 06:31

Contact Information
EOC Phone: | EOC Fax:
Primary EM Contact Name: | *Primary EM Contact Phone:*
Secondary EM Contact Name: | Secondary EM Contact Phone:

Government Office Status
Office Status: Unknown
Expected to Open Date: (MM/DD/YY) | Expected to Open Time: (HH:MM)
Expected to Close Date: (MM/DD/YY) | Expected to Close Time: (HH:MM)

EOC Status
EOC Open: Unknown | Activation Level: *(Required if EOC is Open)* Unknown
Expected to Open Date: (MM/DD/YY) | Expected to Open Time: (HH:MM)
Expected to Close Date: (MM/DD/YY) | Expected to Close Time: (HH:MM)

Proclamations
State of Emergency Unknown
Send a copy of your Proclamation to the county EOC (fax, e-mail, ...)
Indicate how sent (method/to):

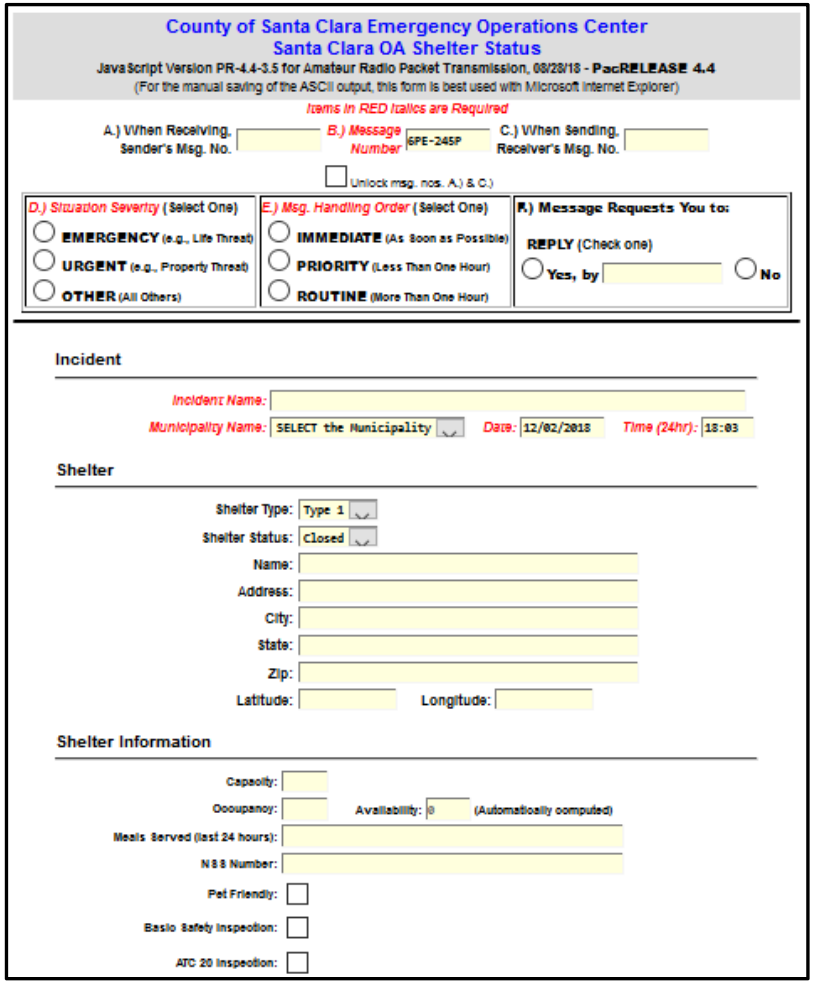
Page 1 of 2

Current Situation -- *Note: if "Problem" or "Failure" is selected under Status, a Comment is required.*

Type	Status	Comments
Communications	Unknown	
Debris	Unknown	
Flooding	Unknown	
Hazmat	Unknown	
Emergency Services	Unknown	

New Shelter Status Form

- Managing information in their terms
- Last minute PacFORM add required for this year's Bay Area Yellow Command Exercise (focus was on shelter operations)



County of Santa Clara Emergency Operations Center
Santa Clara OA Shelter Status
JavaScript Version PR-4.4-3.5 for Amateur Radio Packet Transmission, 08/28/18 - PacRELEASE 4.4
(For the manual saving of the ASCII output, this form is best used with Microsoft Internet Explorer)

Items in RED Italics are Required

A.) When Receiving, Sender's Msg. No. | *B.) Message Number* 6PE-245P | C.) When Sending, Receiver's Msg. No.

Unlock msg. nos. A.) & C.)

D.) Situation Severity (Select One)
- EMERGENCY (e.g., Life Threat)
- URGENT (e.g., Property Threat)
- OTHER (All Others)

E.) Msg. Handling Order (Select One)
- IMMEDIATE (As Soon as Possible)
- PRIORITY (Less Than One Hour)
- ROUTINE (More Than One Hour)

F.) Message Requests You to:
REPLY (Check one)
Yes, by | No

Incident

Incident Name:
Municipality Name: SELECT the Municipality | *Date:* 12/02/2018 | *Time (24hr):* 18:03

Shelter

Shelter Type: Type 1
Shelter Status: Closed
Name:
Address:
City:
State:
Zip:
Latitude: | Longitude:

Shelter Information

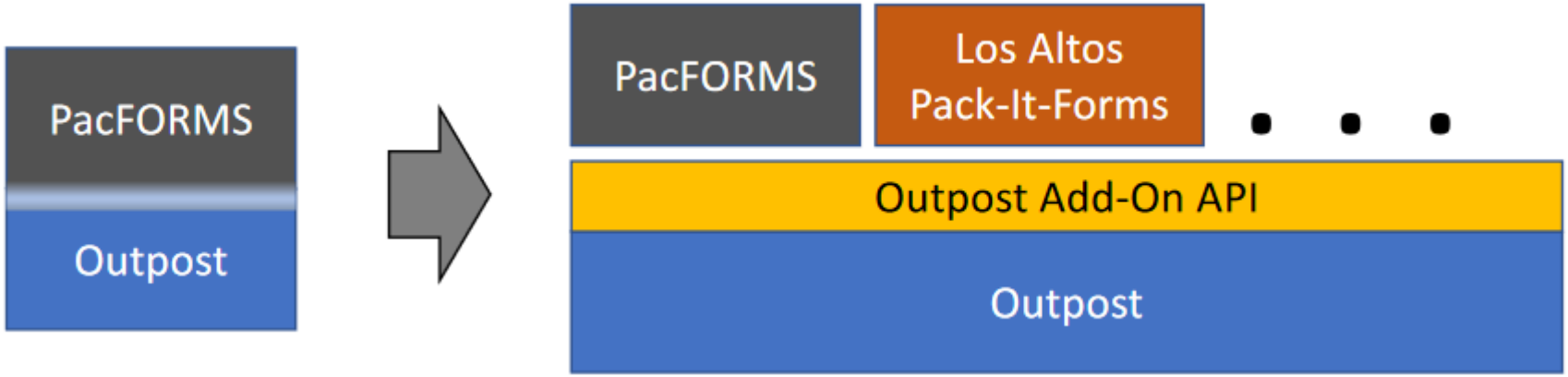
Capacity:
Occupancy: | Availability: 0 (Automatically computed)
Meals Served (last 24 hours):
NSS Number:
Pet Friendly:
Basic Safety Inspection:
ATC 20 Inspection:

What's Next? … PacFORMs

- Mutual Aid Request Form
  - As County OES changes what they need, we will align our tools to support them.
  - Changes planned are around usability
- Hospital Forms updates
  - Approached by Medical Health Operations Center to help revise all Hospital PacFORMs to align with their changing standards.

What's Next? Add-on's

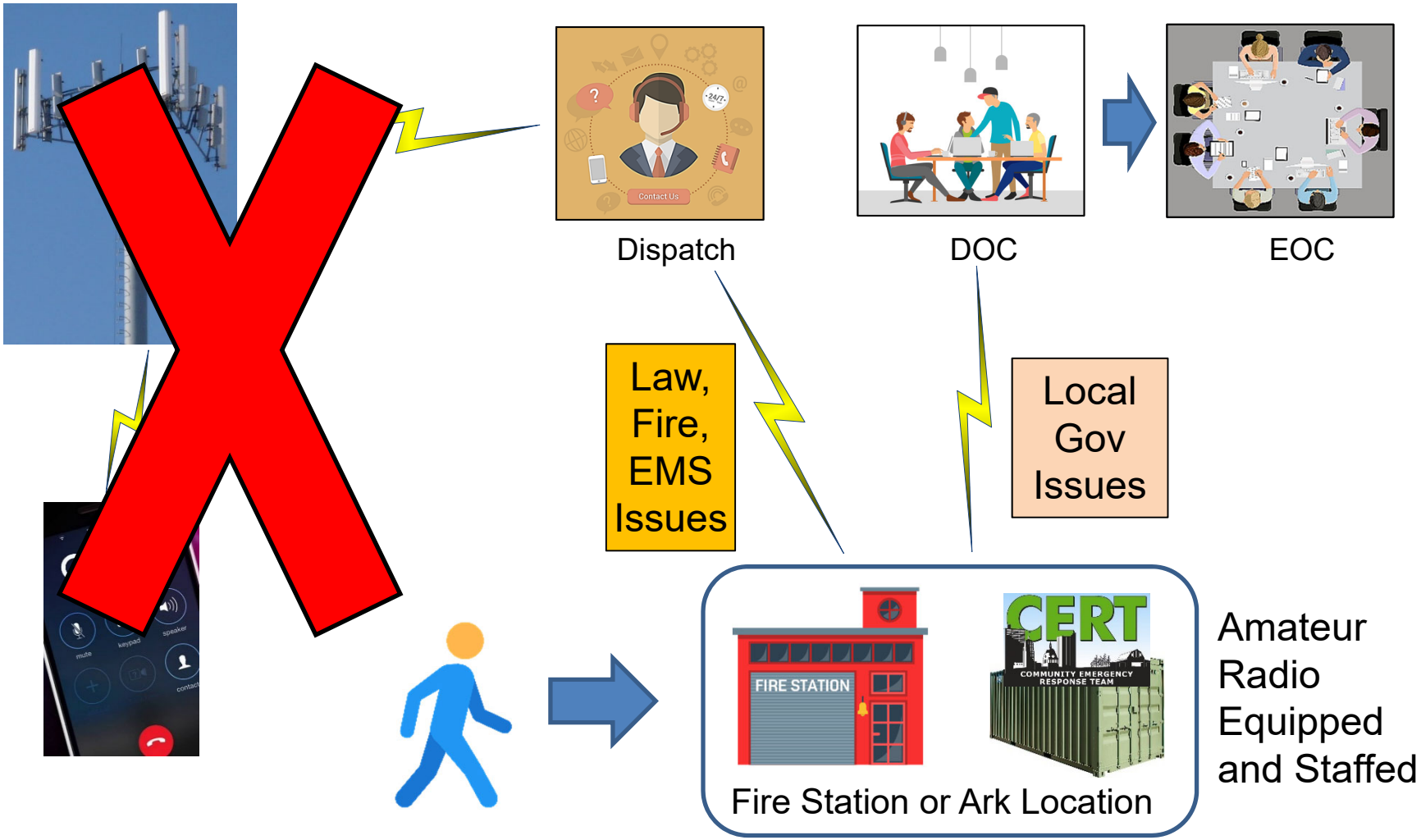
- The Outpost/PacFORMS integration has been very useful
- But much of the interaction is hard-coded in Outpost
- New API provides standard way to connect apps to Outpost
- Enables more automation and integration with workflow
- PacFORMS will eventually migrate to API as well



First Add-on… *Alternate 911 (Alt911)*

- 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.
- 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.
- 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.

First Add-on… *Alternate 911*



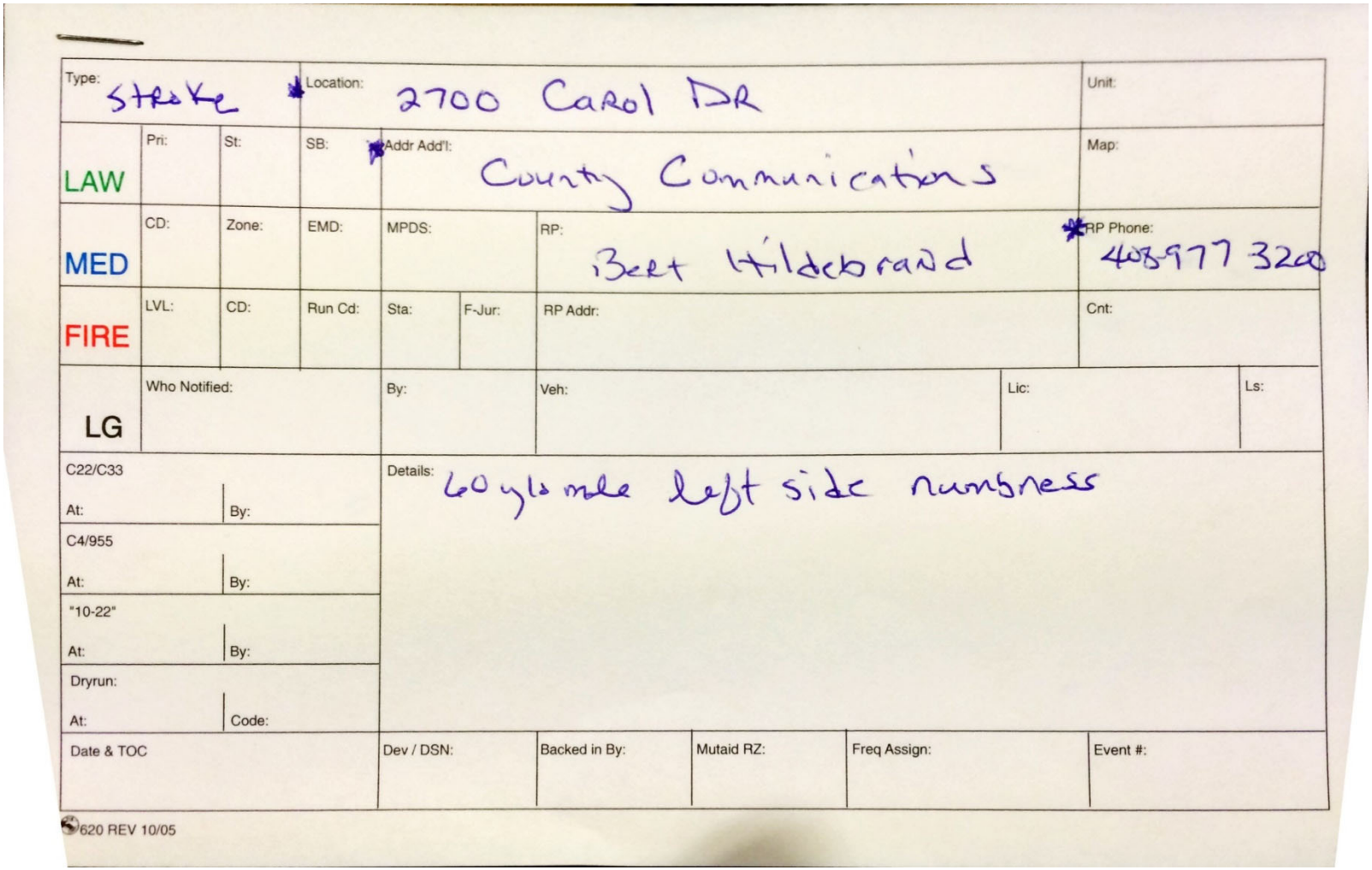
Managing information in their terms

What County Comm needs to know

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

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

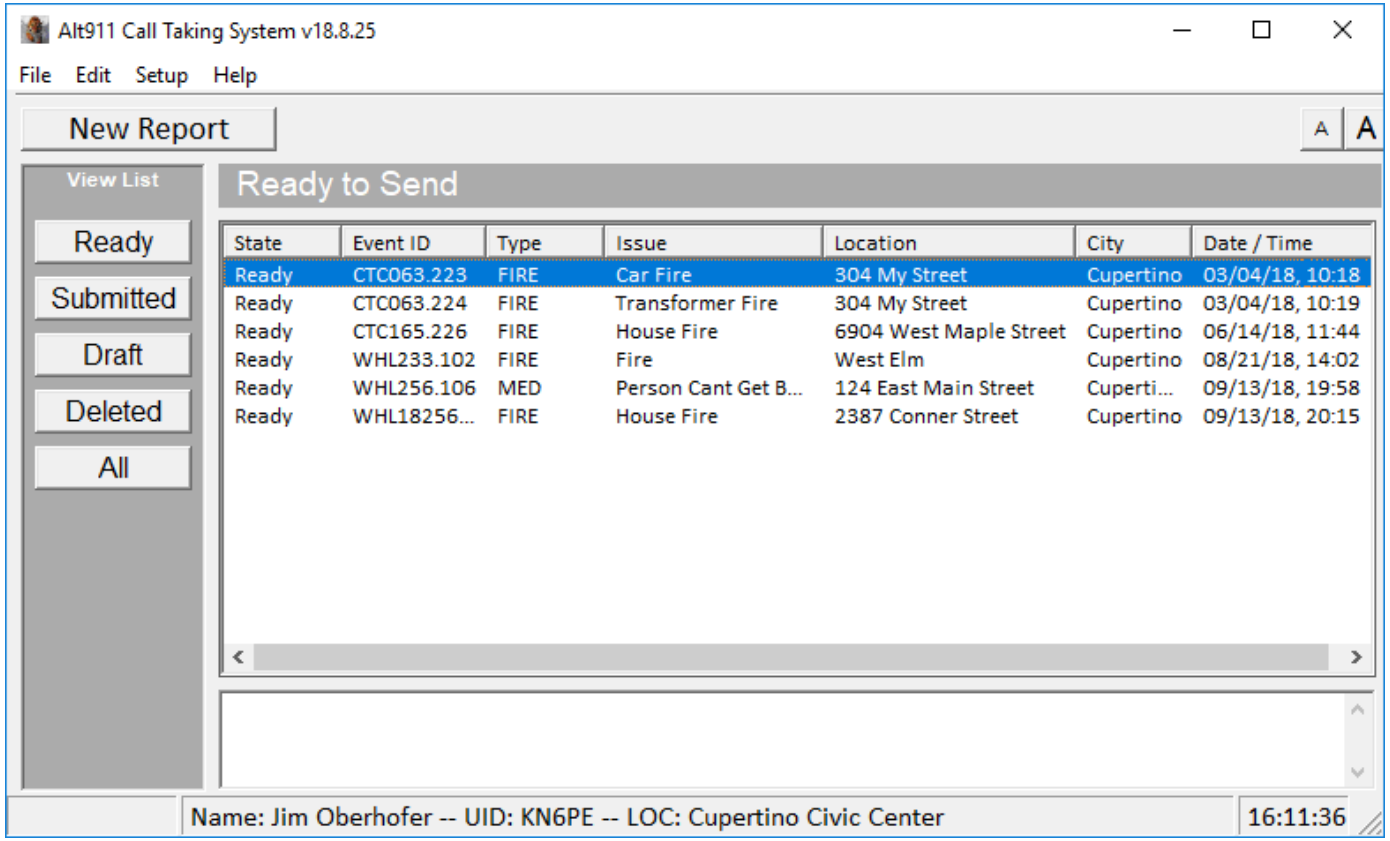
County Comm's manual paper form



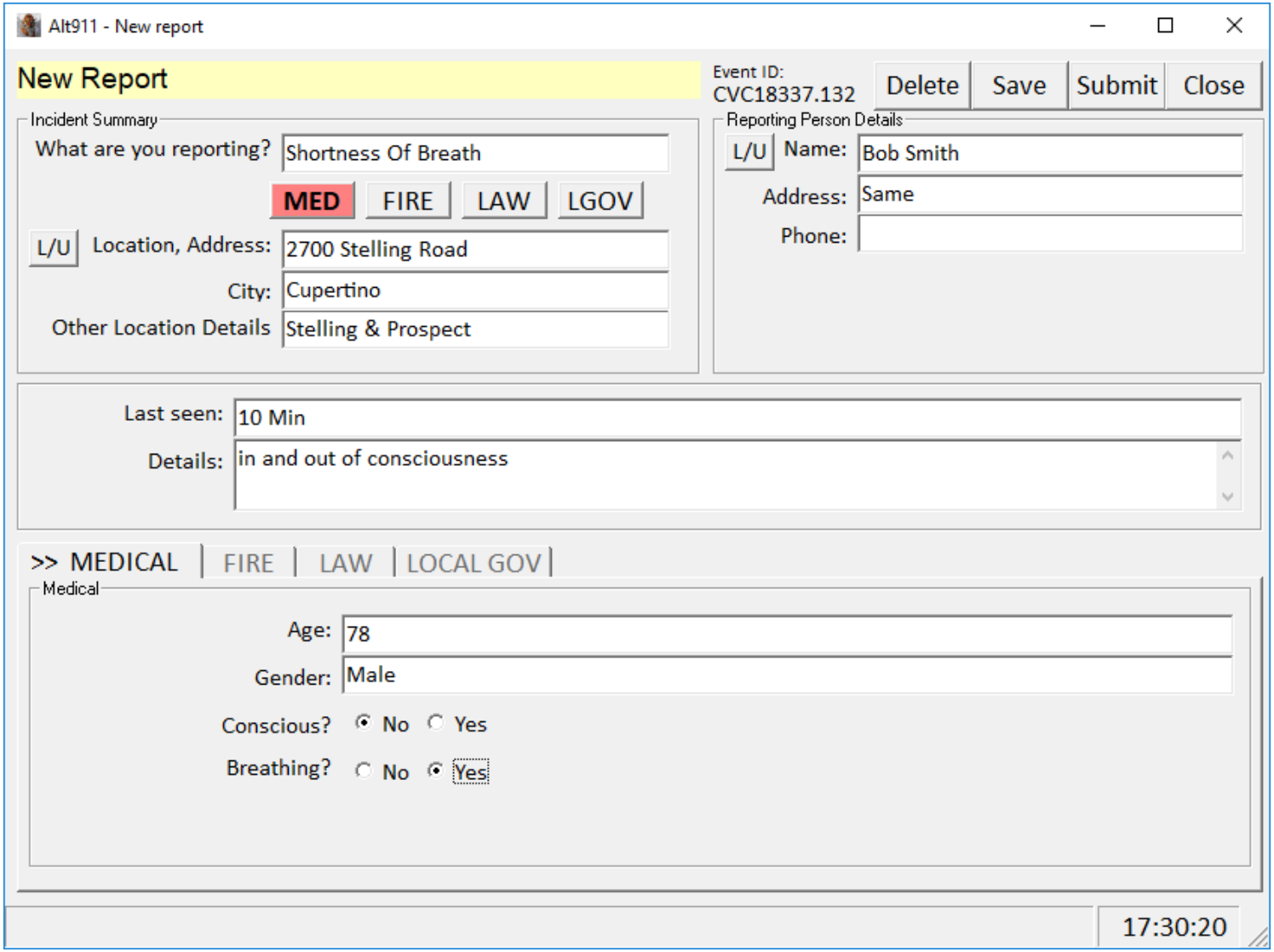
Type: Stroke			Location: 2700 Carol DR					Unit:
LAW	Pri:	St:	SB:	Addr Add'l: County Communications				Map:
MED	CD:	Zone:	EMD:	MPDS:	RP: Bert Hildebrand			RP Phone: 408-977-3200
FIRE	LVL:	CD:	Run Cd:	Sta:	F-Jur:	RP Addr:		Cnt:
LG	Who Notified:			By:	Veh:		Lic:	Ls:
C22/C33 At:	By:	Details: 60 yo male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

620 REV 10/05

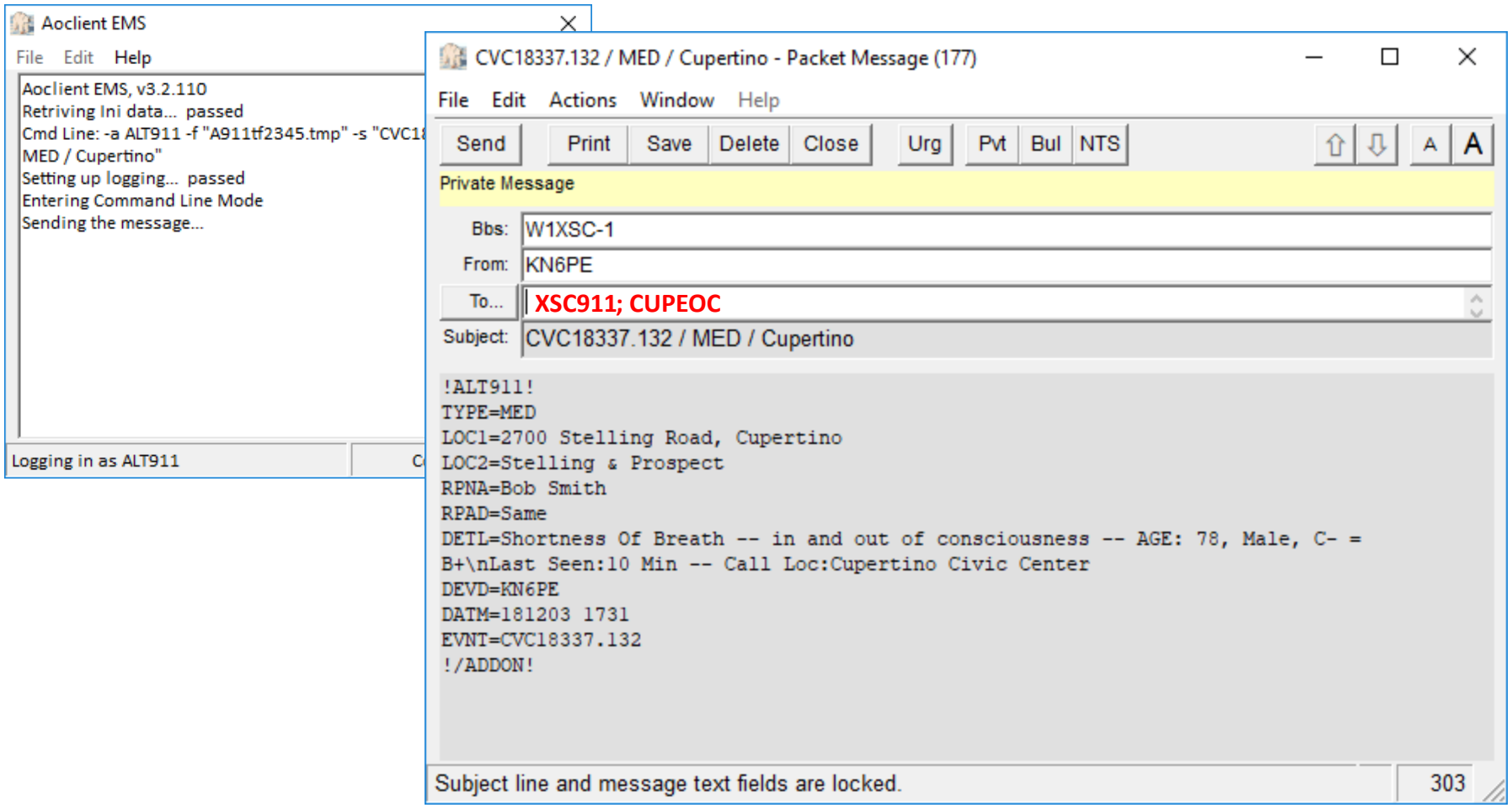
Alt911 Call Taking System



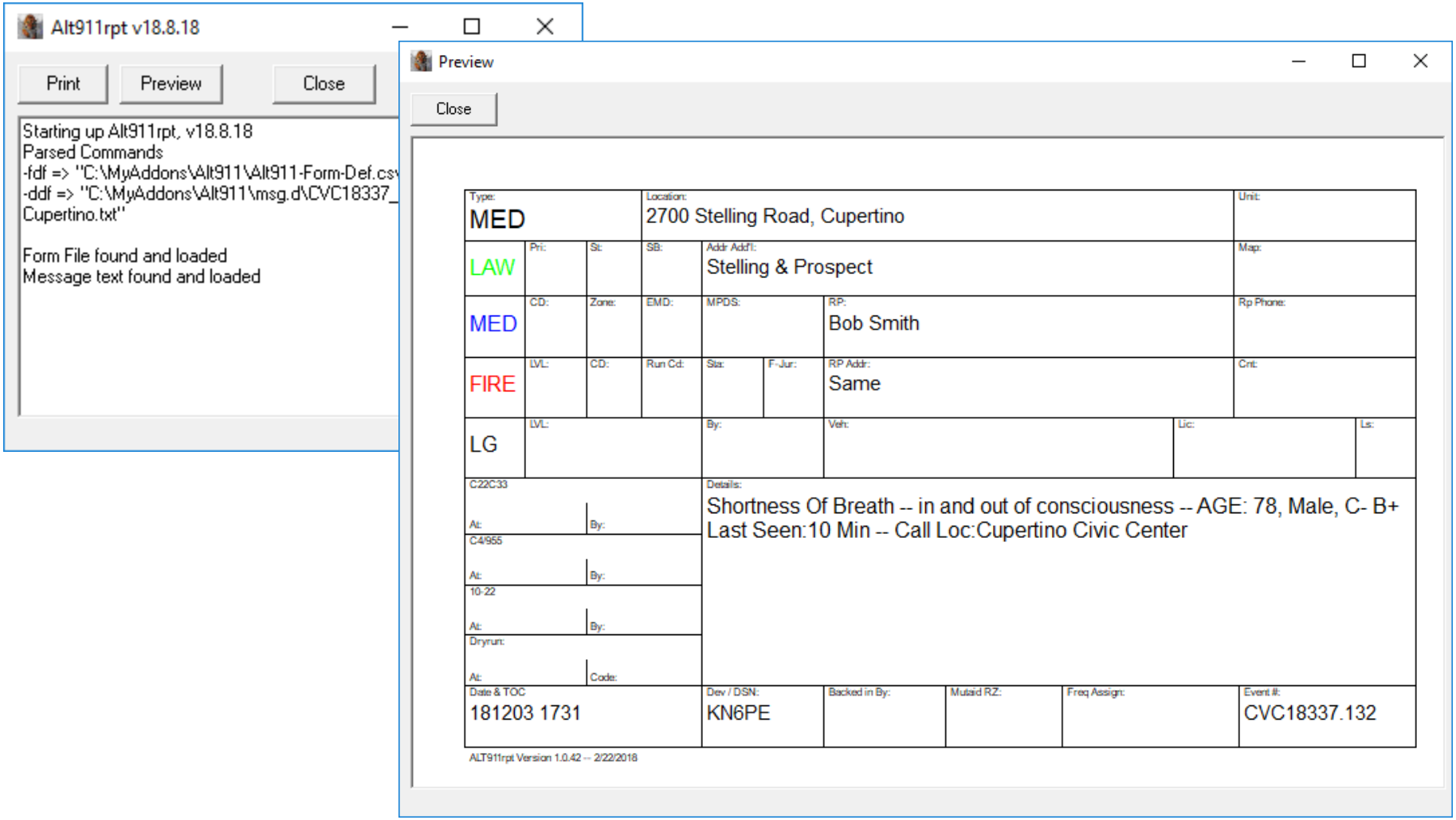
Taking a MED report (dispatches EMS)



Sending it to the Packet station

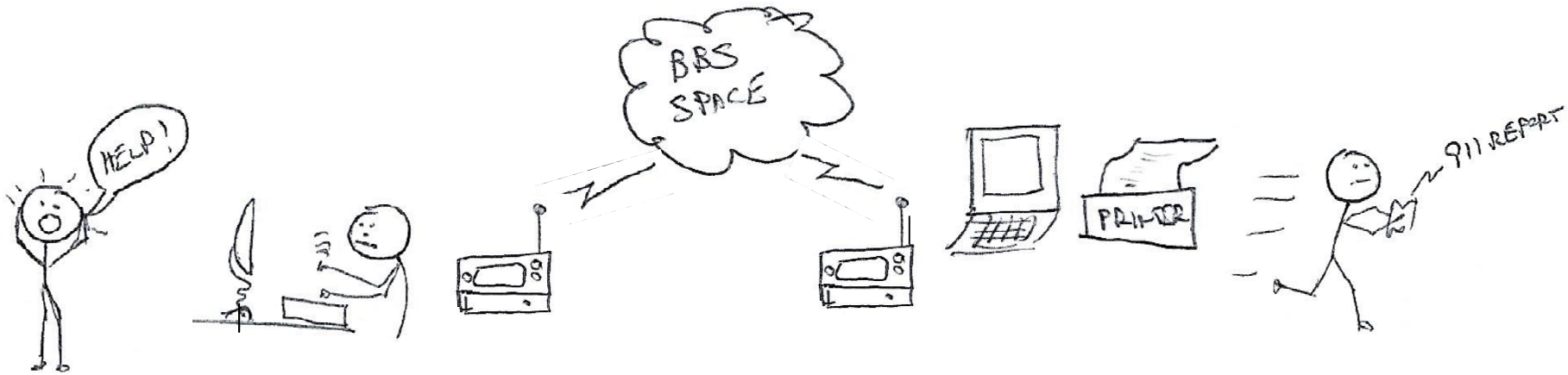


Receiving & printing



The end to end message flow

Resident **RACES** **RACES**



Alt911cts
Aoclient
Opdirect
Outpost

Outpost
Alt911rpt

The Packet Value Proposition

- What do these things have in common?
  - Outpost enhancements, updates
  - PacFORM additions, changes
  - Policy refinements
  - Messaging add-on delivery
- All of SCCo Packet Service improvements enhance our ability to support our Served Agencies.
- Our Served Agencies see our value as ***doing business in their terms***, that is, managing information and communications on their behalf.
- Our packet infrastructure, training, and capabilities allow us to do this!

For More Information

- Support
  - See the Santa Clara County ARES/RACES web site packet page
    - https://www.scc-ares-races.org/data/packet/index.html
  - Join the packet discussion group
- Practice
  - Send a message during the weekly packet net, either or both days
    - https://www.scc-ares-races.org/data/packet/weekly-packet-practice.html
    - Automated feedback to help you improve, verify you've got it right
  - Participate as a packet operator at drills and other events

County Wide Drill
Moffett Field

Santa Clara County ARES®/RACES
Andreas Ott, K6OTT
Revised: 05-Dec-2018

XSC-18-08T
aka. #CWD20181027
Moffett Field

ARRL Simulated Emergency Test 2018

Supporting Santa Clara County CERT teams communications at six field locations and an EOC

K6OTT

Stats (some preliminary)

- 60 participants: 41 ham radio operators (17 “new hams” licensed since 2014), 1CERT, 18 staff
- MAC evaluations at levels 3, 2 and 1
- 2 operations shifts, 3.25 hours each
- 16 cities and agencies represented
- 6 simulated command posts, 1 EOC in Drill City
- 78 messages passed: 43 packet, 35 voice (some logs are most likely missing)
- ARRL SET score: 579 points

EOC

Field Command Post

Lessons learned (what staff is doing)

- This is as close to a real incident as it gets (supporting CERT in the field to communicate to the EOC)
- Repeat experience (same drill held in 2016), still very labor intensive in planning and execution
- You wish you had a working printer at your field packet station
- DSW processing (thank you for your patience)
- Processes, procedures, content of training classes
- Forms review on-site at checkout (and trying to “recreate” the event from incomplete logs)

SCCo ARES/RACES
Data Network Update

Santa Clara County ARES®/RACES
Michael E Fox, N6MEF
Revised: 05-Dec-2018

Agenda

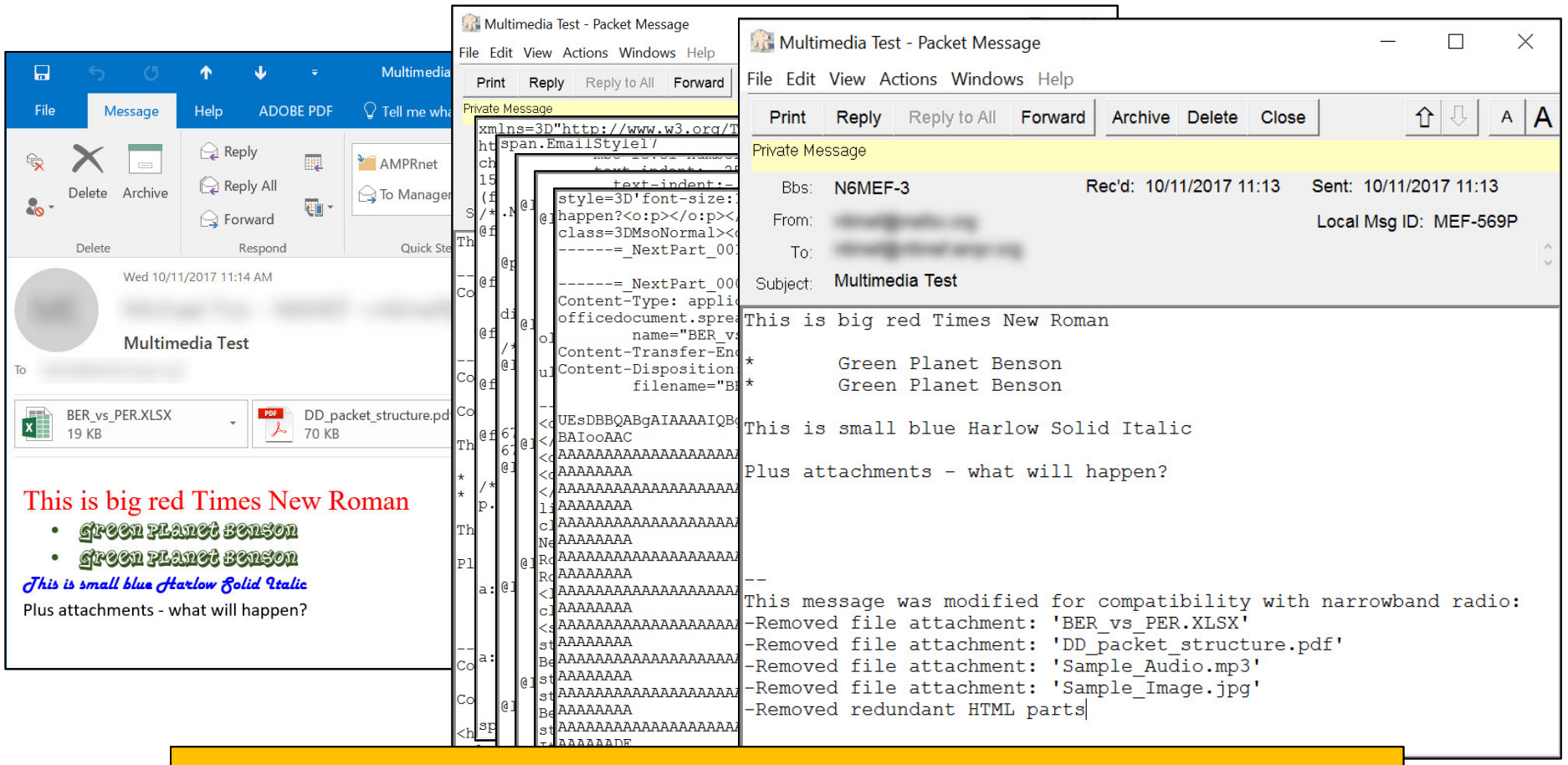
- Infrastructure
  - Plain Text Conversion for E-mail to Packet
  - Redundant Core Connectivity
  - Power System Enhancements
- Access
  - 440 MHz TCP/IP Radios
  - WiFi Connections to Cities, Hospitals, …

Reminder:
Plain Text Conversion for E-mail to Packet

Original E-Mail

Packet: Old Behavior

Packet: New Behavior



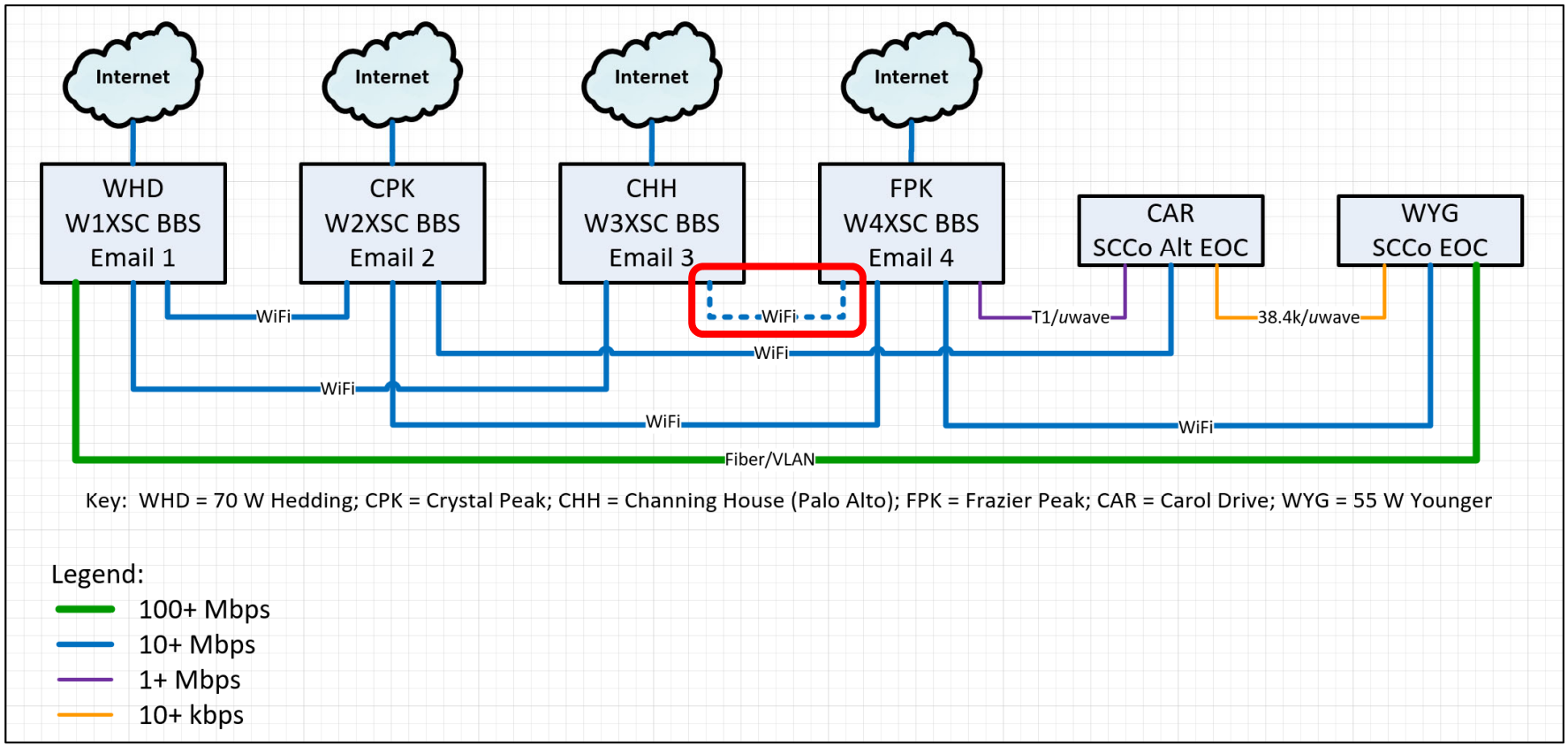
Result: Shorter, readable, printable, recipient informed of changes

Plain Text Conversion: Status

- 2017 Year End
  - Basic functionality working on development server
  - Need to add
    - Error-handling
    - Variety of unusual cases: ex. encoding, blank body w/ text attachment
  - Lots more testing needed; move to test server
  - Expected production deployment: Spring 2018

- 2018 Year End
  - No additional progress – other priorities
  - Plan: Deliver basic functionality for early 2018; complex cases later

Redundant Core Connectivity

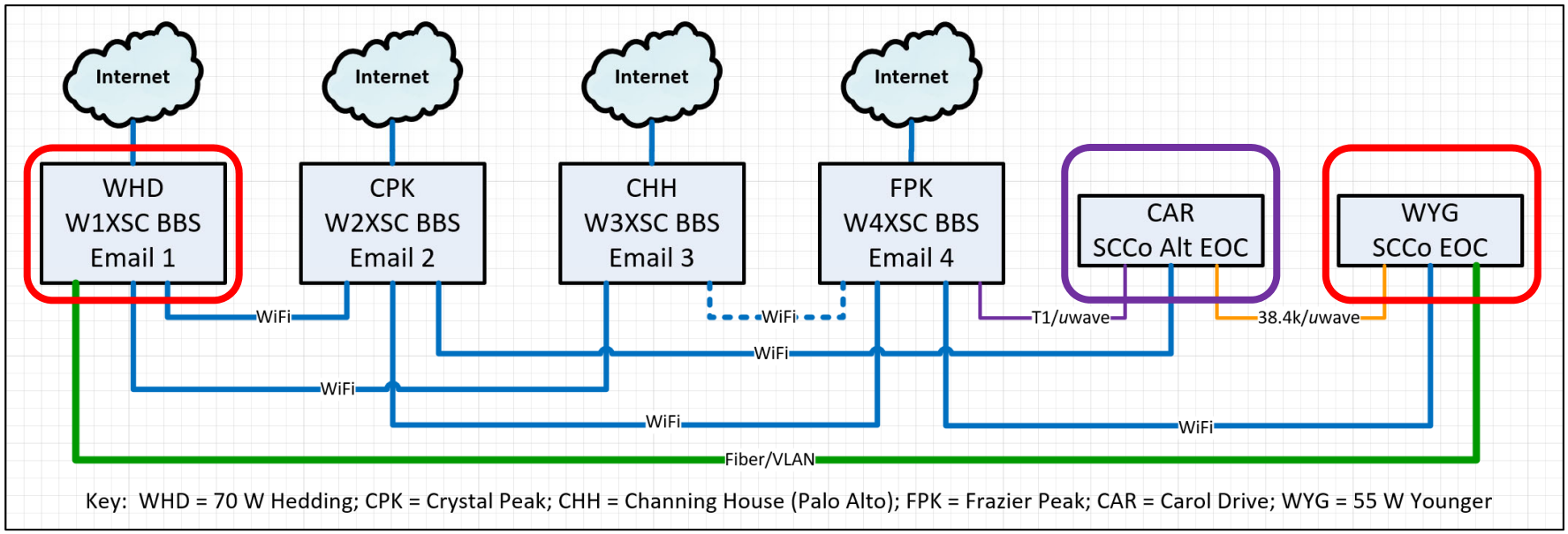


2018 Goal: Install FPK end of link from CHH to FPK

Redundant Core Connectivity: Status

- 2018 Progress
  - Administrative challenges overcome
  - Dish mounted at Frazier Peak
- Next steps
  - Complete wiring at Frazier Peak
  - Antenna alignment (both ends)
- Challenges
  - Rainy season

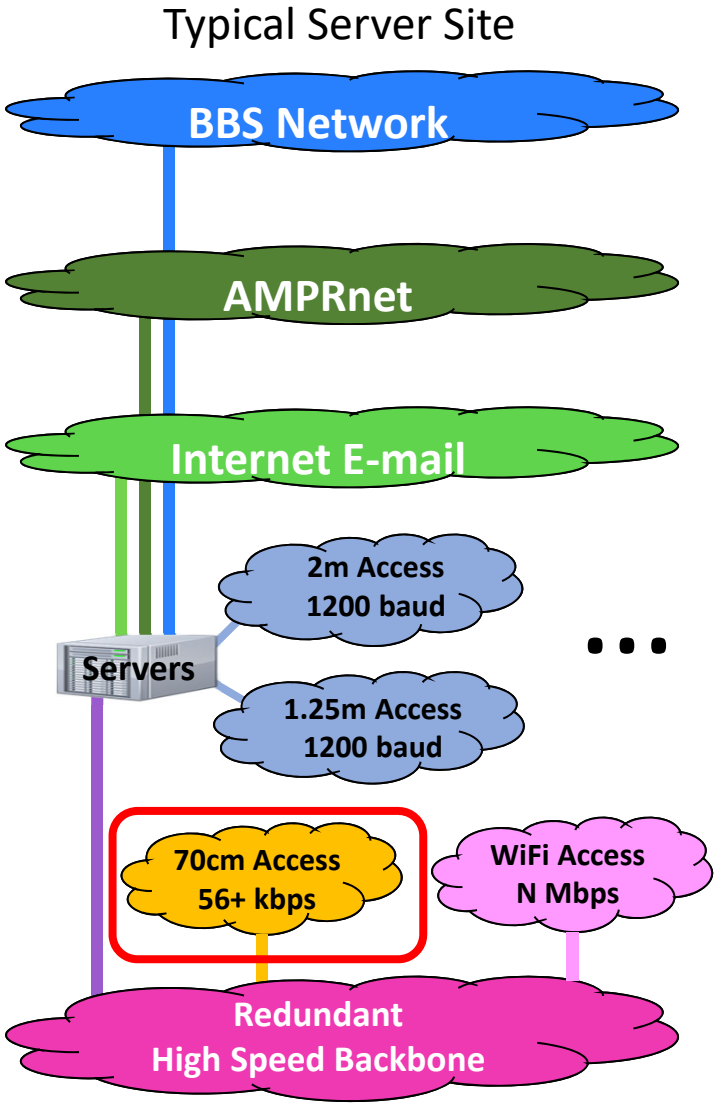
Power System Enhancements



- UPS capacity upgraded: WHD, WYG
- UPS added: CAR
- All core sites have UPS plus generator power
- 2019: Upgrade DC remote power control at WHD

440 MHz TCP/IP Radios: Reminder

- Goals:
  - Enable TCP/IP access where line of sight for WiFi is not available
  - Accessible services
    - Packet BBS (Telnet)
    - E-mail (POP/SMTP)
- Challenges
  - Operate in 70 cm amateur band with Part 97 allowed emission type
  - Point to multi-point operation
  - Enough speed to handle chatty TCP/IP protocols (simplex: 56 kbps X 2)
  - Enough power to reach across multiple cities



440 MHz TCP/IP Radios: 2018 Activity

- Two commercial vendors selected for testing
  - CalAmp Viper SC+:
    - 10 W, 50 MHz channel, 128 kbps 16 FSK, static
  - 4RF Aprisa SR+:
    - 5 W, 50 MHz channel, 240 kbps 64 QAM, dynamic, FEC
  - Both are priced in the $1200-1400 range

440 MHz TCP/IP Radios: 2018 Activity

- Bench testing
  - RF testing
  - Application testing: Packet over Telnet, E-mails with attachments

440 MHz TCP/IP Radios: 2019 Plan

- We know this works
  - Both vendors have large commercial deployments
  - But they are in licensed bands with directional antennas
- Radios are too expensive and proprietary to move forward before we achieve success in a reasonable number of locations
- Follow-up with vendor, implement recommendations, make it work in our environment
- Once we know what it takes to make it work, re-evaluate cost of overall solution

WiFi Connections to Cities, Hospitals, …

- We're ready for subscriber connections
- Service description web pages exist
  - Explains what's possible, how to request connection
- Subscriber config web page by end of the month
  - Should answer most (all?) questions about subscriber-side network configuration: addressing, routing, firewalling, etc.

- 2019 Plans
  - Acceptable use policy
  - Self-service login/password management
  - Connecting sites

Amateur Radio for Emergency Managers

Santa Clara County ARES®/RACES/ACS
Michael Fox, N6MEF
Revised: 05-Dec-2018

This section to be distributed later

End

Thanks for coming!

Please complete the course Evaluation.

See you at a training class next year!