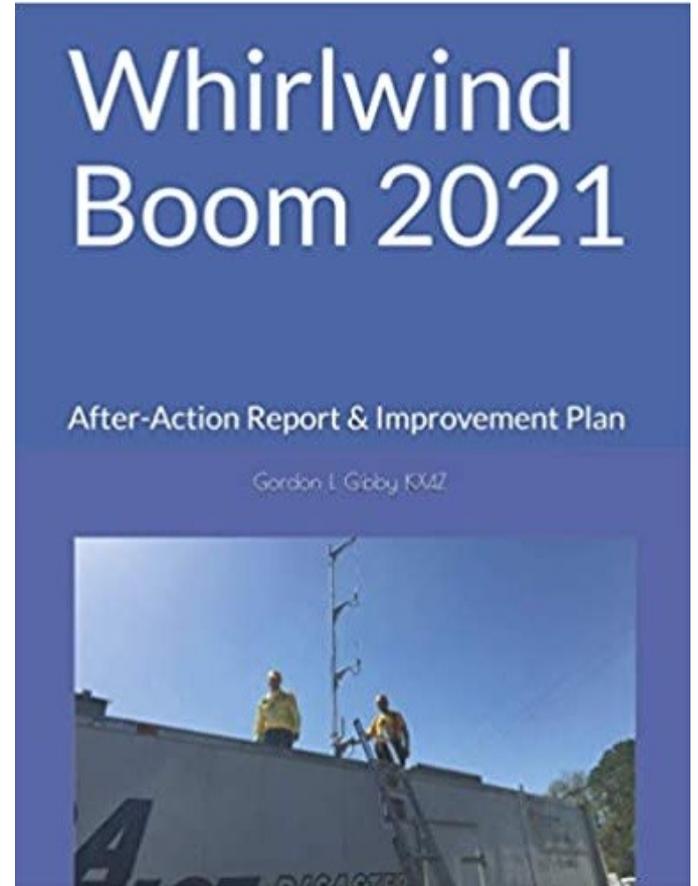
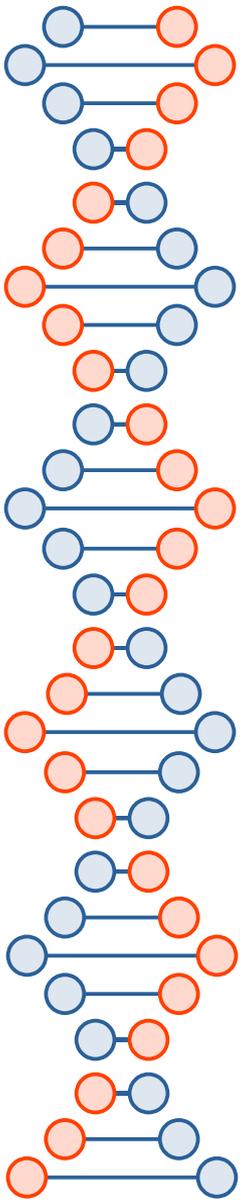


Creating HSEEP-based Radio Exercises To Benefit SHARES

Growing Interoperability &
County Awareness of the
SHARES Program

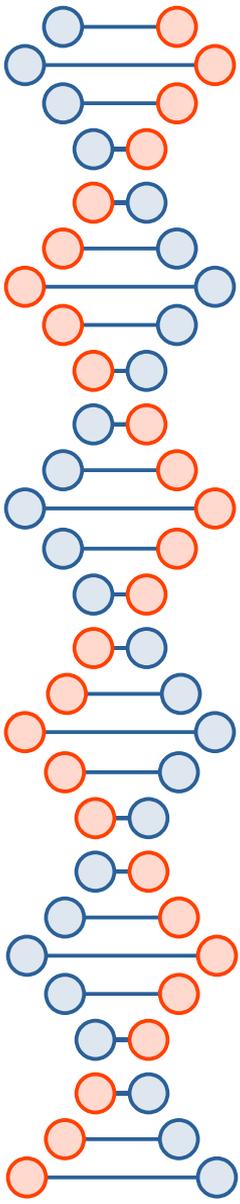
2021 Whirlwind Boom
Exercise,
Florida, March 19 2021





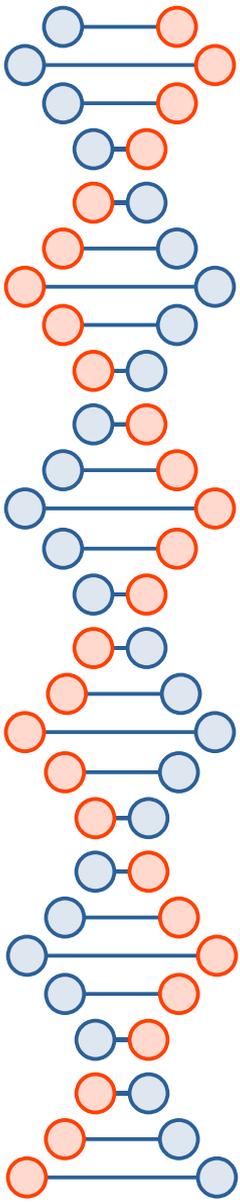
Full Disclaimer

- 1) I am a relative beginner at HSEEP Exercises with only a few years of experience and (thankfully) some mentoring by some real experts.
- 2) I ended up creating most of the Exercise under discussion – so there should be plenty of room for correction & improvement!
- 3) Paperback / Kindle:
<https://www.amazon.com/Whirlwind-Boom-2021-After-Action-Improvement/dp/B0915BFTW8>
- 4) Web: (free)
<https://qsl.net/nf4rc/FBDR/2021/WhirlwindBoomAARIP.pdf>



What we'll cover

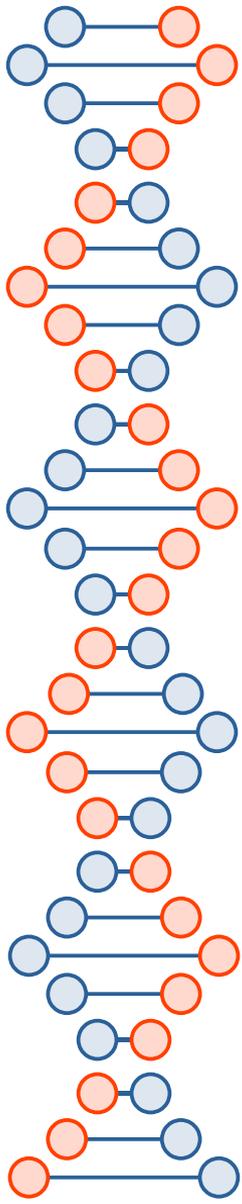
- 1) HSEEP relationship to Emergency Operations Plan.
 - a) Fuzzy extant emergency operations plans for backup volunteer radio groups if called upon.
- 2) The Genesis of Whirlwind Boom 2021
- 3) Step by Step how an HSEEP-based Exercise was developed, executed, analyzed.
- 4) The Results
- 5) What we learned – what needs to be improved
- 6) **Huge benefits of regular HSEEP-based Exercises to the SHARES community.**



Exercise Basics

DATE / TIME	Friday evening, March 19 2021
PREPARATORY WORK	Objective 3.0 – Communications Planning to be carried out at County / Group level
GROUPS INVOLVED	8 Florida County Responses Northern Florida ARES® SHARES (Southeast Regional Net, Winlink) Florida Baptist Disaster Relief Comms Team Florida Div Emergency Mgmt Volunteer Volunteers from up to 13 additional states
SESSIONS	7PM – 7:45 EDT ENTIRE EXERCISE OVER IN TWO HOURS 7:45 – 8:30 EDT 8:30 – 9:00 EDT
OBJECTIVES	Included hierchical structured comms serving common operating picture + Resource Requests + Survivor messaging (See list, next slide)
ANALYSIS	Hotwash, Comments, Anonymous Forms, Review of data comms

HSEEP-based Objectives Tied to FEMA Core Capabilities



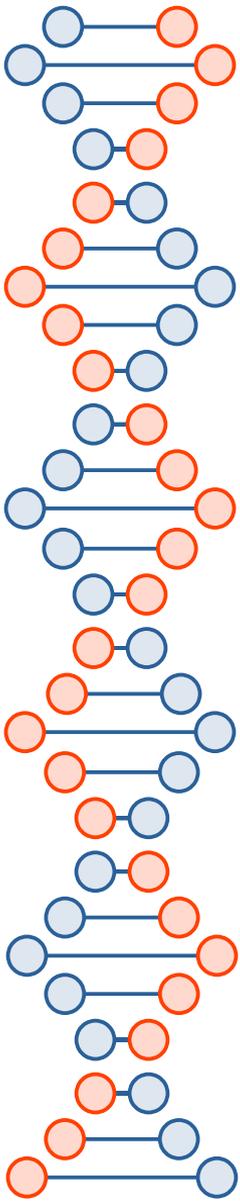
1.0 Antenna Deployment	Speed of replacement
2.0 Emergency Power	Ability to continue operations
3.0 Communications Planning	Local group leadership
4.0 Voice Communications	Multiple sub-objectives: Multi-level comms Structured comms Tactical Survivor
5.0 Data Communications	Multiple sub-objectives: Similar to voice requirements above
6.0 Interoperability	
7.0 Volunteer Handling	Ability to deal with “walk-on’s”

Toes in Lots of Ponds

- 1) SHARES: Weekly voice nets, fast-growing radio email and ALE systems.
.....Comms Exercises?
- 2) Alachua County EOC / ARES®: Our E.M. is delighted to have us simply because their three employees total don't understand communications and believe that WE WILL make contact with the State or shelters when the chips are down....and we have 15+ solid volunteers
- 3) North Florida Section (NFL) ARES – a few modestly strong county clubs
- 4) Florida Baptist Disaster Relief: total loss of comms in Hurricane Michael resulted in complete re-boot of their disbanded comms group.

**CYBERSECURITY
& INFRASTRUCTURE
SECURITY AGENCY**





HSEEP

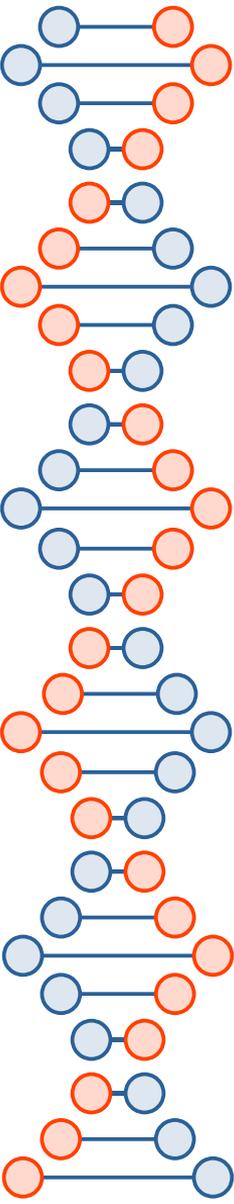
HSEEP: Great buzzword.
How does it apply to SHARES?

Homeland Security Exercise and Evaluation Program (HSEEP)

JANUARY 2020



Homeland Security



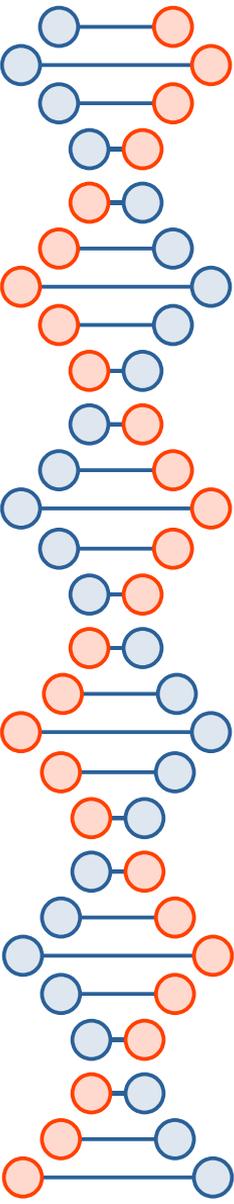
FEMA: HSEEP

HSEEP is the recommended doctrine for creating and using exercises to improve capabilities.

*“The Homeland Security Exercise and Evaluation Program (HSEEP) provides a set of **fundamental principles** for exercise programs, as well as a **common approach** to*

- 1) program management,*
- 2) design and development,*
- 3) conduct,*
- 4) evaluation, and*
- 5) improvement planning.” [emphasis & formatting added]*

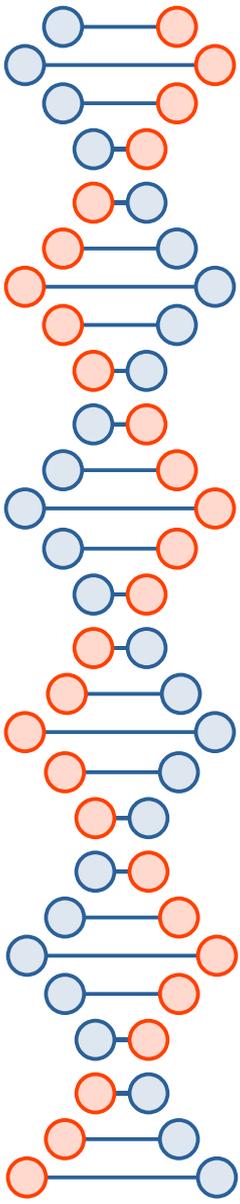
a) <https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf>



HSEEP Fundamental Principles

Whirlwind Boom 2021

- 1) *Senior Leadership Guidance* (a weakness of Whirlwind)
- 2) *Informed by Risk*: Yes, generally.
- 3) *Capability-Based, Objective-Driven*: Yes!
- 4) *Progressive Exercise Planning Approach* (we're just starting out)
- 5) *Whole Community Integration*: Sorta. We attempted to engage the whole "volunteer comms community"
- 6) *Common Methodology*: Yes!



HSEEP *assumes* prior operational planning

An exercise is an event or activity, delivered through discussion or action, to develop, assess, or validate **plans, policies, procedures, and capabilities** that jurisdictions/organizations can use to achieve **planned objectives**. [emphases added]

Through Improvement Planning, jurisdictions/organizations take the corrective actions identified during exercises to **improve plans, build and sustain capabilities**, and maintain readiness. [emphases added]

<https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf>

Introduction, page v.

THIRA / Preparedness Priorities

Older HSEEP documentation appears to assume planning, but without much detail.

FEMA Comprehensive Planning Guide (CPG) 101 Version 2.0 Nov 2010 was signed by Craig Fugate (KK4INZ) – a member of Alachua County ARES®.

Basic guide to coming up with Emergency Operations Plans. Amended and updated....

https://www.fema.gov/sites/default/files/2020-05/CPG_101_V2_30NOV2010_FINAL_508.pdf

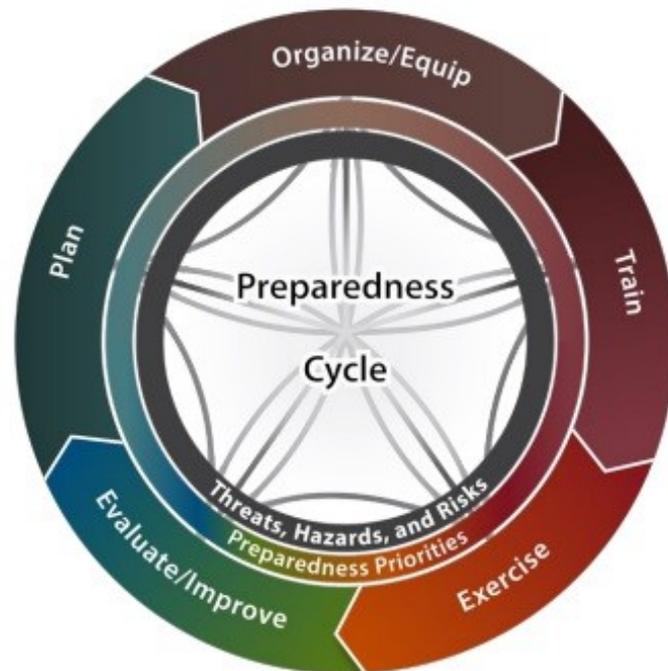


Figure 2.1: The Integrated Preparedness Cycle

CPG 101 2021 Draft

2074 6.7. Communications

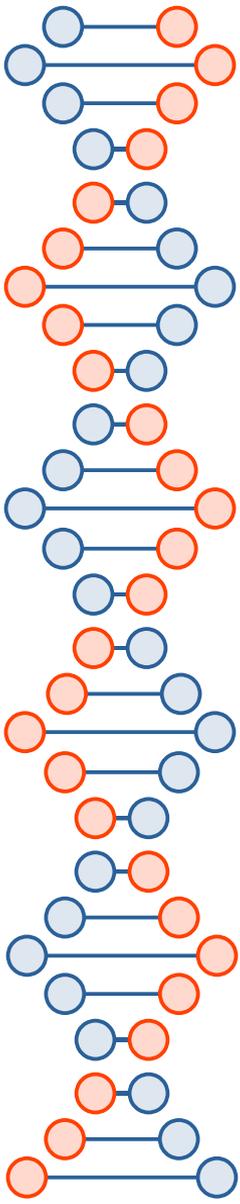
2075 This section describes the communication protocols and coordination procedures used between
2076 response organizations during emergencies and disasters. It discusses the framework for delivering
2077 communications support and how the jurisdiction's communications integrate into the regional or
2078 national disaster communications network. It does not describe communications hardware or
2079 specific procedures found in departmental SOPs/SOGs.

2080 Planners should identify and summarize separate interoperable communications plans for each
2081 communication system that they use. This section may be expanded as an annex and is usually
2082 supplemented by communications SOPs/SOGs and field guides.

2083 **Communications Section Checklist**

- 2084 Describe the framework for delivering communications support and how the jurisdiction's
2085 communications integrate into the regional or national disaster communications network.
- 2086 Identify and summarize separate interoperable communications plans.

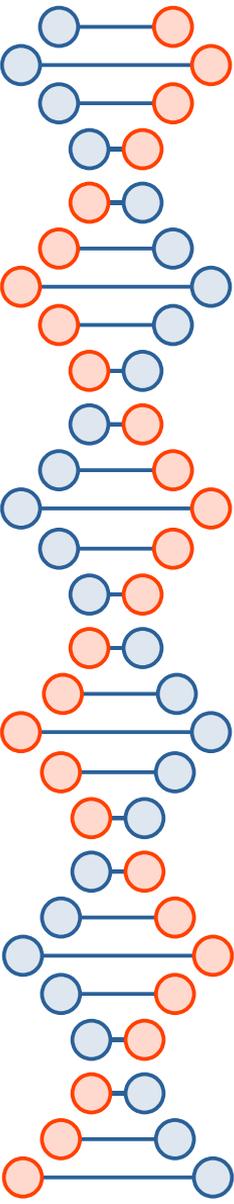
https://www.fema.gov/sites/default/files/2020-11/fema_comprehensive-preparedness-guide_11-17-20.pdf



National Security Telecommunications Advisory Committee Report to the President on Communications Resiliency May 6 2021

- 1) [https://www.cisa.gov/sites/default/files/publications/NSTAC Report to the President on Communications Resiliency.pdf](https://www.cisa.gov/sites/default/files/publications/NSTAC%20Report%20to%20the%20President%20on%20Communications%20Resiliency.pdf)
- 2) Long on fluff, short on specifics ; no operational plans My summary:

Potential Resiliency Stressors	Solutions envisioned
EMP	No further recommendations after EO 13865
Position Navigation and Timing Disruption	No forward progress and no solid plans.
Long Term Grid Outage	Categorize government fuel caches.
Supply Chain Cyber Attack	“Collaborate with private industry”
Evolutions in Secure Internet Routing	No signif effort at a solution

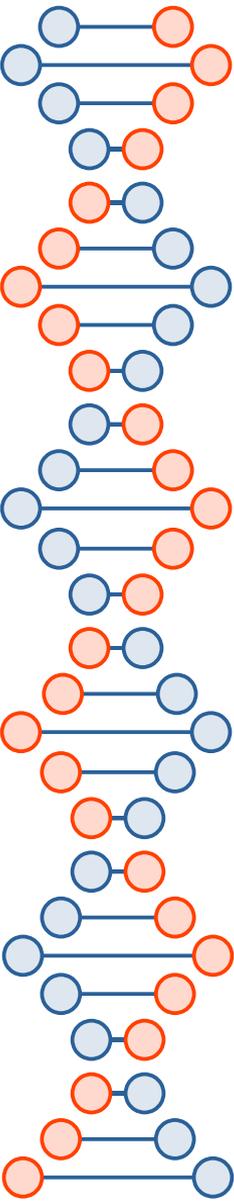


2020: HSEEP Now Encompasses Planning

*“In January of 2020 the Federal Emergency Management Agency (FEMA) published the 2020 revision to the Homeland Security Exercise and Evaluation Program (HSEEP) standards. The most notable change in this revision was the **expansion of the HSEEP methodology from a training and exercise focus to the entire Integrated Preparedness Cycle. It now includes elements for planning, organizing, equipping, training, exercising, evaluation, and improvements.** The Multi-Year Training and Exercise Plan (MYTEP) from the previous methodology is now replaced with an Integrated Preparedness Plan (IPP) which encompasses those additional elements.” [emphasis added]*

a) Purpose, Alachua County Integrated Preparedness Plan 2021-2024.

<https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf>



Emergency Operations Planning: Drill Down

- 1) Most disaster backup systems have *some* preset protocols
 - a) Voice net frequencies, net procedures
 - b) Data systems, software
 - c) Possibly satellite setups, SARNET, etc.
 - d) Examples include SHARES nets, WINLINK, FLBDR ad-hoc repeater and satellite system
- 2) These provide “conduits” in disasters
- 3) **I see less planning for**
 - a) **standardized information / data to be transacted,**
 - b) **from whom,**
 - c) **to whom?**
- 4) **Should this be planned out & trialed? If our backup systems aren't designed and proven to move useful information, why would a State or other agency be interested?**

Comprehensive Emergency Plans

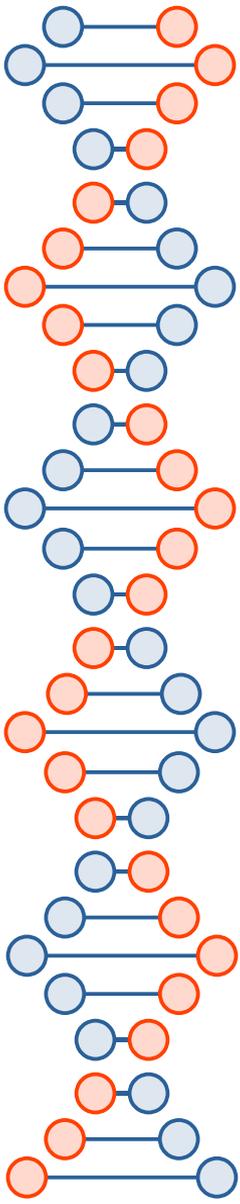
- 1) Florida publishes a lengthy Comprehensive Emergency Plan
 - a) <https://www.floridadisaster.org/globalassets/cemp/2020-cemp/2020-state-cemp.pdf>
- 2) VAGUE on exactly **what** data will be transferred, from whom, via whom, to whom. (Assumes computers?)

THE STATE OF FLORIDA



State of Florida
2020
Comprehensive Emergency
Management Plan

Florida Division of Emergency Management
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100



FL CEMP: Lists multiple comms system

But little info on how they would be involved.

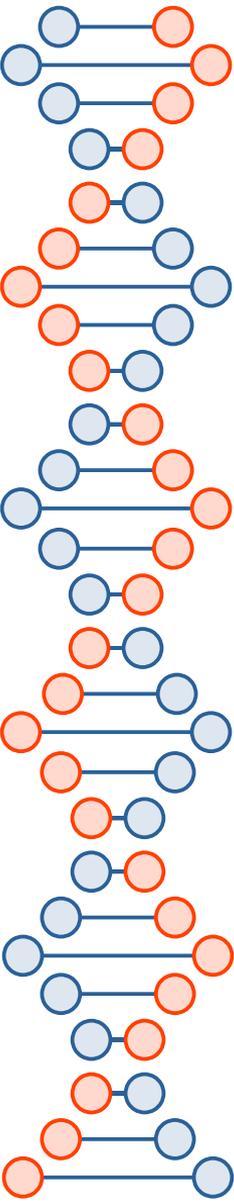
State, cont'd.

Figure 2 – STATE AND FEDERAL COMMUNICATION SYSTEMS

STATE COMMUNICATIONS SYSTEMS	FEDERAL COMMUNICATIONS SYSTEMS
1. Commercial Telephone	1. National Oceanic and Atmospheric Administration (NOAA) Weather Wire Service (NWWS)
2. Hot Ring Down for Nuclear Power Plants	2. National Warning System - Federal (NAWAS)
3. Amateur Radio Emergency System	3. Radio Amateur Civil Emergency Services (RACES)/Amateur Radio Emergency Services (ARES)
4. Commercial Wireless Devices	4. Shared Resources (Shares) High Frequency (HF) Radio Program
5. Emergency Management Network (EMnet)	5. FEMA National Radio System (FNARS)
6. Mobile Satellite Phone System (MSAT)	
7. Emergency Alert System (EAS)	
8. Everbridge Mass Notification System	
9. State Law Enforcement Emergency Radio System (SLERS) (800 MHz)	
10. Florida Interoperability Network (FIN)	

11. Survivor Assistance Information Line (SAIL)
12. 800 MHz Conventional National Mutual Aid Network
13. Very Small Aperture Terminal (VSAT) Satellite System
14. National Warning System - State (NAWAS)

Last known Florida exercise using amateur/related appears to be RADAR II, 2013?
<http://www.n7wwk.com/Radar-II/> ((official link broken))

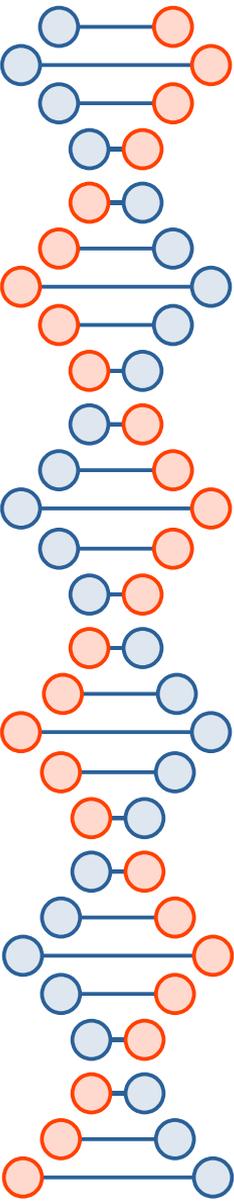


Florida Comprehensive Plan: Communications Interoperability

4. Communication Interoperability

The Florida Interoperability Network (FIN) is a statewide network developed and managed by the Department of Management Services, Division of Telecommunications. The Division maintains one station and one tactical system on FIN. This network of communication systems supports all radio frequency bands and proprietary systems to ensure interoperable communications. It features a secure network with encryption throughout the network. The components are scalable as necessary. Additional tactical systems deployed across the state include: EDICS (Emergency Deployable Interoperable Communication System), MIL-WAVE (Secure Milwave™ Wireless GSM Communications Network), EDWARDS (Emergency Deployable, Wide Area Remote Data System), MARC (Mutual Aid Radio Communications) and TAC-SAT (Tactical Satellite Communications).

No real discussion of precisely how these different systems will communicate, send what, or to whom.



When **WAS** the Last Backup Exercise?

With no known volunteer backup comms exercises led by the State since 2013 (RADAR II), [cost issues??] but real problems experienced by Florida Baptist, it seemed time to try to pull together an exercise.

	HSEEP Exercise Experience					
	2016	2017	2018	2019	2020	2021
Achua Co. ARES / NFARC		1 st 2 nd	3 rd	4 th 5 th	6 th	WWB
NFL Section	None	None	None	Aborted	1 st	WWB
Florida Baptist Disaster Relief	No Comms	No Comms	No Comms	None	None	WWB
SHARES SE	??	??	??	??	??	WWB

Input Welcomed! *It is likely that several participants in SHARES SE have some experience in HSEEP My knowledge of their past exercises is limited.*

What Kicked Off Whirlwind Boom

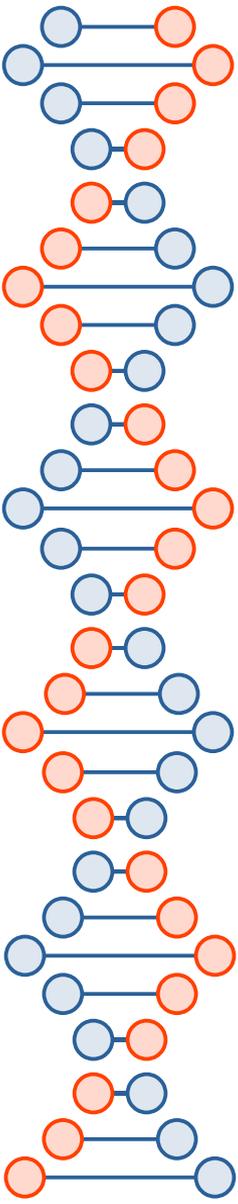
1) Rebirth of the Florida Baptist Disaster Relief Comms group

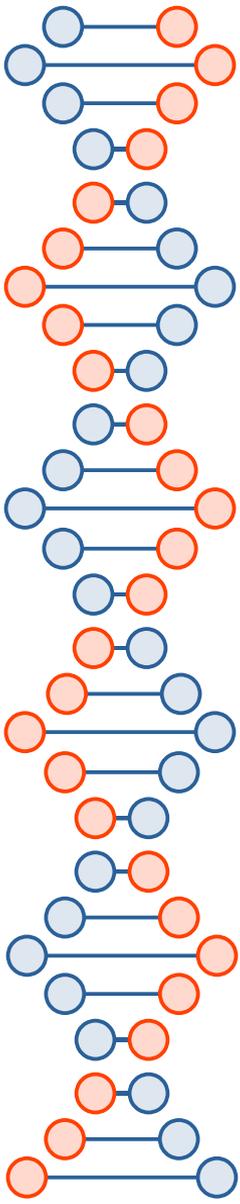
- a) Dismantled after “cell phones” – reborn after Hurricane Michael left this disaster group with ZERO communications until a dispatched ARES® group reached them.
- b) Fledgling comms group had lots of radios but little experience, no exercises
- c) IN NEED OF A SHAKE OUT EXERCISE
- d) Scheduled to be **deployed** to Jacksonville FL for a weekend training of new volunteers, the comms trailer and comms group would be available for a few hours on Friday Evening, March 19 – and with COVID we did not know if there would be any further possibilities after that!

2) Whirlwind Boom was created on SHORT NOTICE (47 days!) as soon as we were assured of the deployment

3) Designed to exercise FBDR and bring them into touch with other known volunteer-based emergency communications group

- a) North Florida Section ARES®
- b) SHARES 4th Region volunteers
- c) Florida Division of Emergency Mgt [volunteer available]
- d) Later: interested Red Cross-associated amateur volunteers



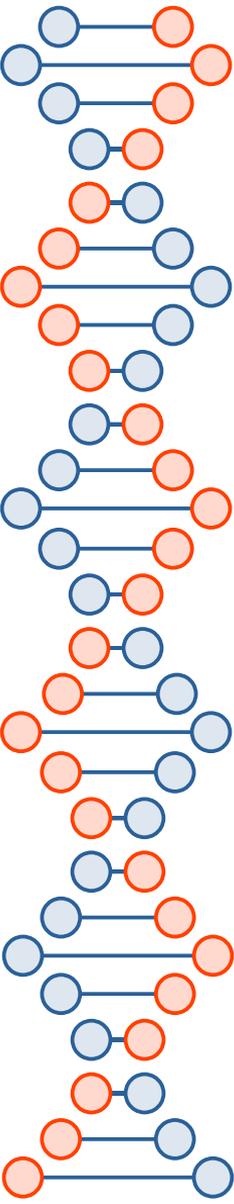


Step By Step:

Mechanics of Exercise Creation

Invite people to help lead!

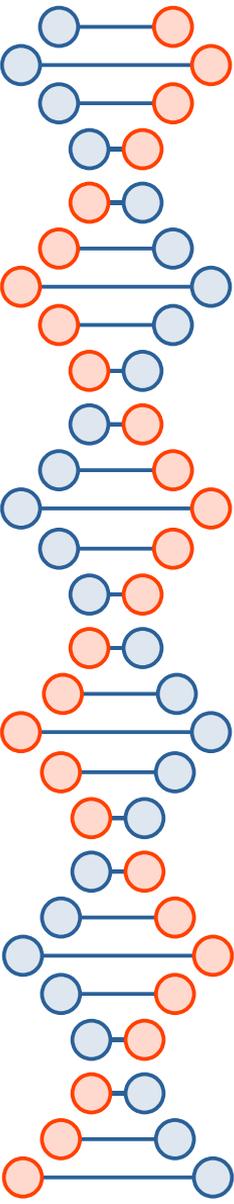
- Come up with an initial Exercise Plan (Core Capabilities, Objectives, Scenario, Tasks)
- Create Promotion / Registration Techniques
- Recruit groups to participate
- Provide “content” to be moved (don’t have exercise participants make it all up!!)
- Arrange for execution oversight / data gathering
- Execute!
- Take hotwash / other feedback
- Create AAR/IP
- Encourage groups to take Improvement Plan & cycle back to Planning!



HSEEP drives planning

- 1) HSEEP: Pick Core Capabilities from FEMA 32
- 2) Objectives: Pick important objectives to test related to Core Competencies
- 3) Write Scenario that will allow those objectives to be carried out.
- 4) Create the specific TASKS to be accomplish the Objectives
- 5) Get it all in a document

<https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf>



Whirlwind Boom – HSEEP Pillars

1) **Core Capabilities:**

- a) Mass Care Services (e.g. shelters)
- b) Operational Communications

2) **Exercise Objectives** (top-level list; all generally apply to both core capabilities)

- a) 1.0 Antenna Deployments
- b) 2.0 Emergency Power
- c) 3.0 Communications Planning (by involved groups)
- d) 4.0 Voice Communications
- e) 5.0 Data Communications
- f) 6.0 Interoperability
- g) 7.0 Volunteer Handling

3) See complete list of Objectives in Table 1, Chapter 1, Exercise Whirlwind Boom 2021 Overview, at <https://qsl.net/nf4rc/FBDR/2021/WhirlwindBoomAARIP.pdf>

4) **NOTE that when you do your exercise planning, you are already writing important material that will be part of your AAR/IP!!**

Test Objectives in a Defined Backup Communications Structure

Due to inability to find fully detailed plans for backup comms from local thru state levels, good bit of “planning” had to be accomplished....just to give objective tasks which could be TESTED in the Exercise.

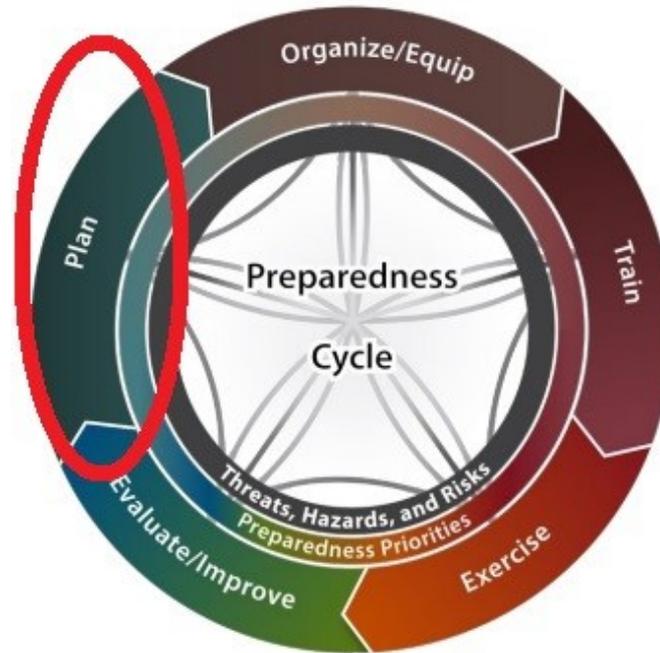
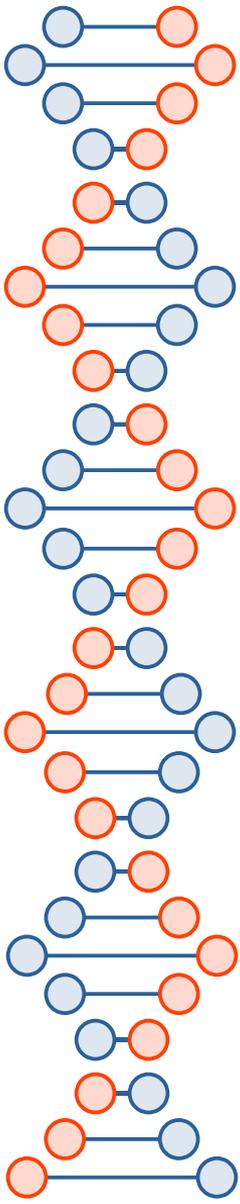
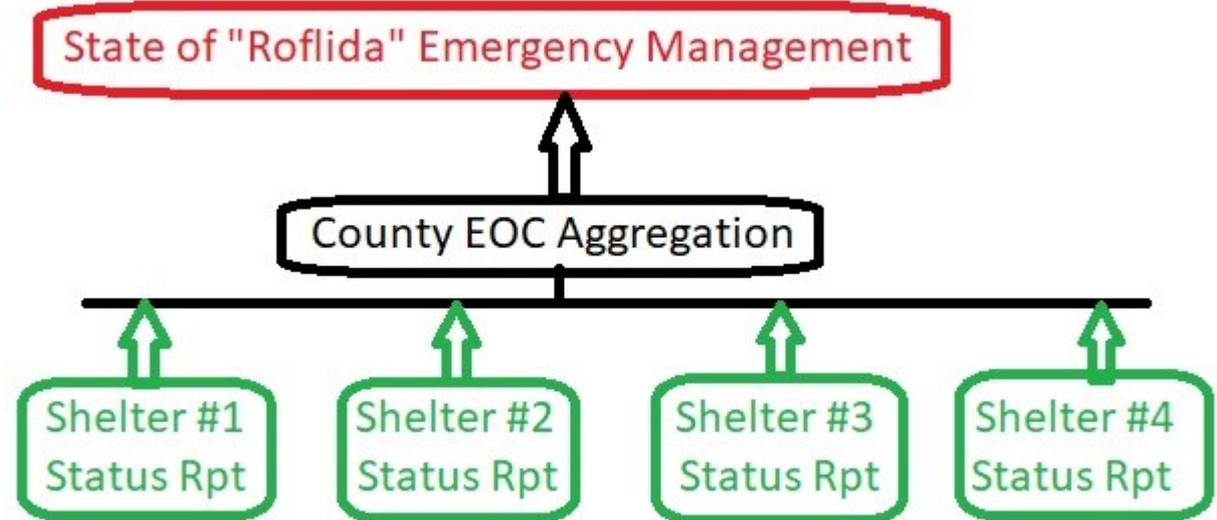


Figure 2.1: The Integrated Preparedness Cycle



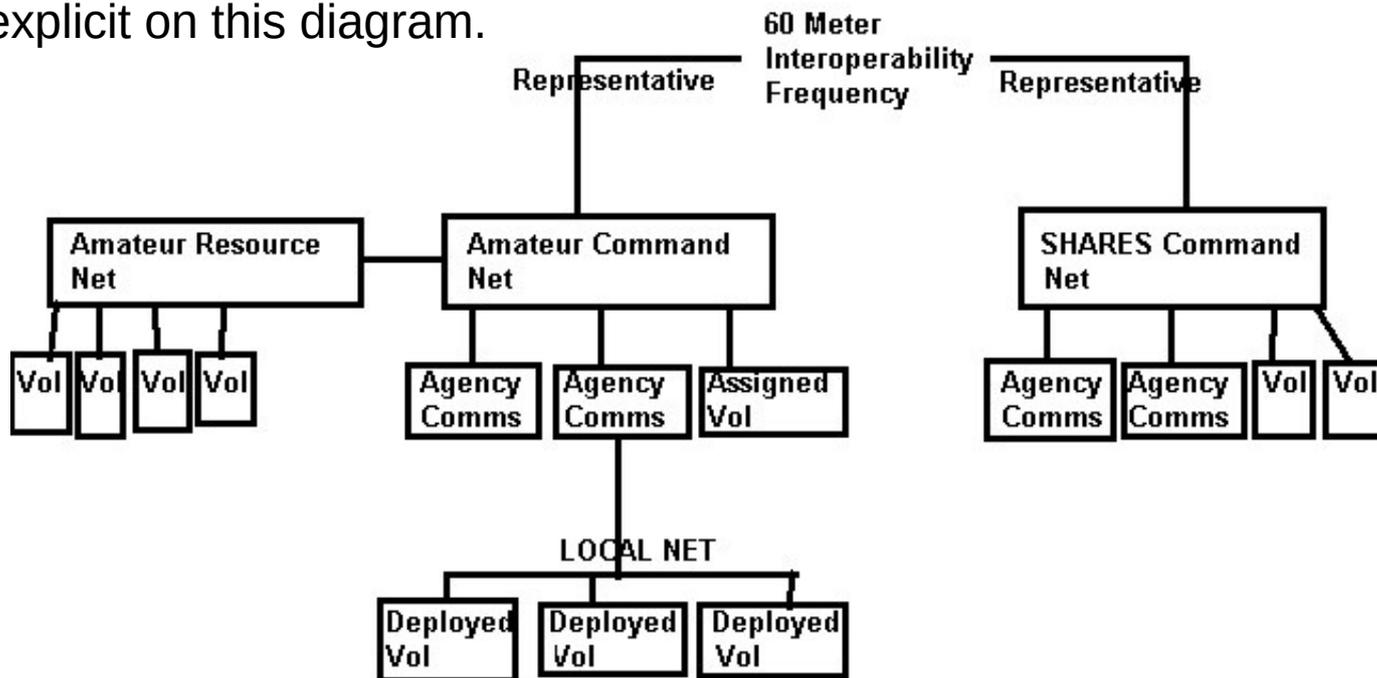
Basic Communications Structure for Exercise...

Situational Awareness Information Transfer serving Core Capabilities “Operational Communications” and “Mass Care Services”: Move common operating picture information from periphery to successive higher levels and use example structured formats to do so.



Replicate that county-by-county

Connection to state resource is assumed but not explicit on this diagram.



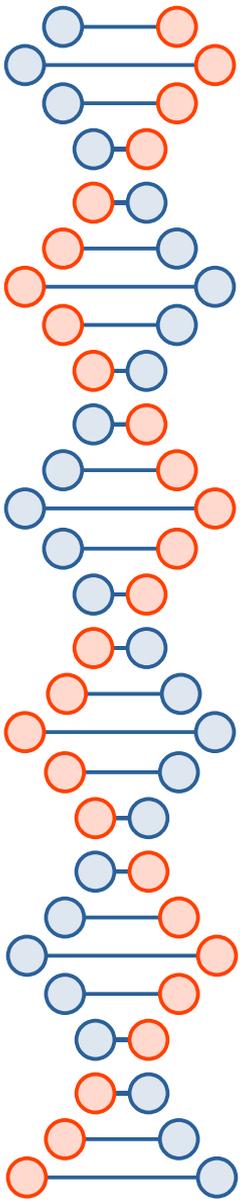
Disaster Comms Pathways

- 1) ARES groups move peripheral structured reports to EOC's, have aggregation done by volunteer EM personnel, move in structured fashion to State, possibly with requests
- 2) FBDR Agency: Similar process for Florida Baptist...move resource requests to higher levels out of disaster area for fulfillment...possibly move H&W traffic

Flexibility: SHARES or Amateur channels usable; voice or data usable – use whatever works for you!!

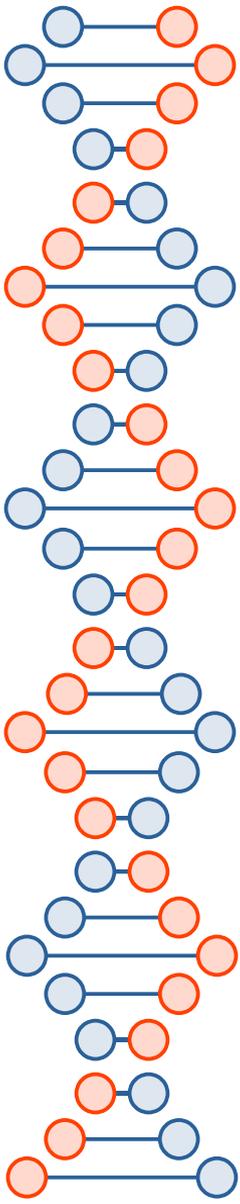
Limited Pathway to “State” (tactical email address) – move by WINLINK or transfer by voice “out of disaster area” then use normal email.





Objective 3.0: **Local Group** Comms Planning

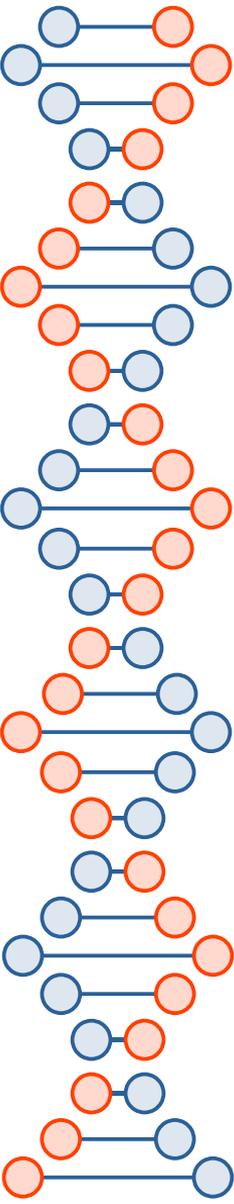
- Local Counties **encouraged** to adjust their local structure/plan – several Emergency Managers took great advantage of this – much stronger relationships resulted. (Empowerment of proper authority.)
- County EM's recognized that THEY were in the driver's seat as the Authority Having Jurisdiction and appreciated that setup!! Wherever possible, we got them to take the most active role possible.
- Some County EM's used a variety of citizen systems – amateur radio, GMRS repeaters, even CB – allowed them to grow their local volunteers in the most appropriate manner for THEIR county.



An Aside

RELATIONSHIPS are where it's at!!

- 1) Friction in one county. “Ham leader” unhappy with EM. Careful, frank 1 hour discussion that brought out previously unrecognized ways the volunteer could express their capabilities within the requests of the EM helped significantly...
 - a) Result was huge improvement, and co- involvement of multiple groups in that county
- 2) First participation ever known in one County – ham-licensed EM took charge!
- 3) Several counties ham leadership worked closely with EM, resulting much stronger relationship, helped fulfill EMPG grants requirements [Emergency Management Performance Grant, typically requires county participation in 3 HSEEP Exercises, see: <https://www.floridadisaster.org/dem/preparedness/grants-unit/>]
- 4) State-level volunteer gained additional WINLINK expertise
 - a) Much closer relationship there
- 5) **EXERCISE BROUGHT ALL THIS ABOUT.**



Paperwork

HSEEP-Speak Categorization

EXERCISE OVERVIEW

Exercise Name	2021 Whirlwind Boom Exercise
Exercise Dates	Friday March 19, 2021 (7 PM-9PM EDT)
Scope	<p>This exercise is a deployment, full scale exercise, planned for 2 hours at multiple locations throughout northern Florida and including participants throughout the southeastern United States.</p> <p>Exercise play is open to a very wide array of volunteers including:</p> <ul style="list-style-type: none">- NTS or other traffic net volunteers,--volunteers participating in the 2021 Florida Baptist Disaster Relief Jacksonville on-site training,- Florida state emergency personnel,- County personnel / volunteers,--ARES® volunteers,- SHARES personnel (federal, state, local, or volunteer), <p>and any other interested amateur radio operators.³¹</p>
Mission Area(s)	RESPONSE
Core Capabilities	MASS CARE SERVICES OPERATIONAL COMMUNICATIONS

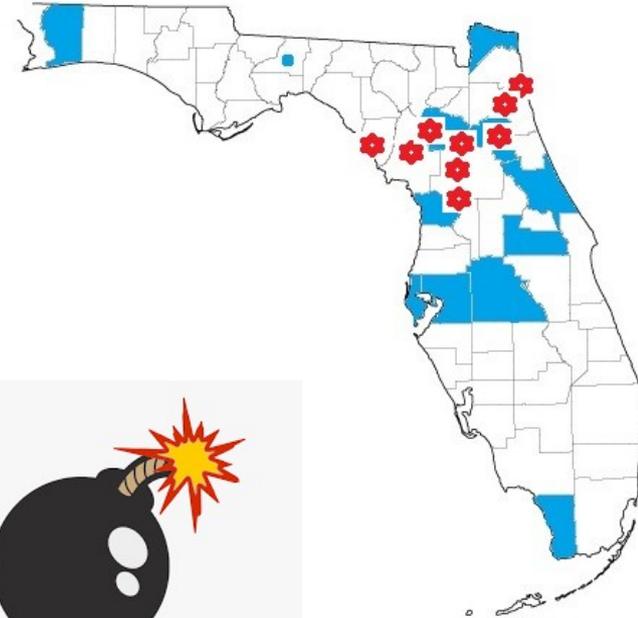
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HSEEP-Speak, cont'd.

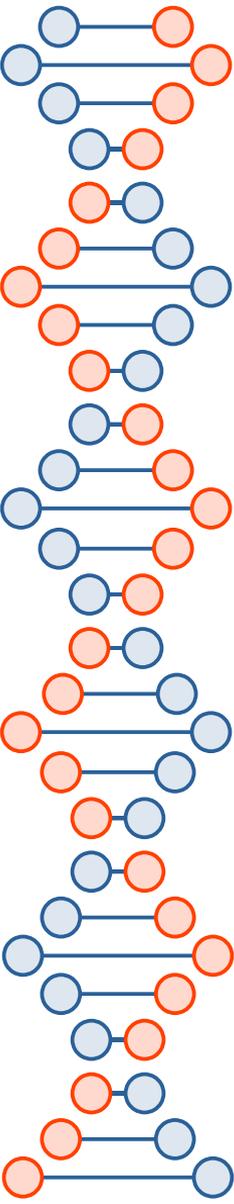
Exercise Name	2021 Whirlwind Boom Exercise
Objectives	<ul style="list-style-type: none">1.0 Antenna Deployment2.0 Emergency Power3.0 Communications Planning4.0 Voice Communications<ul style="list-style-type: none">4.1 Command Net4.2 Formal Status Report4.3 Tactical Communications4.4 (Optional) Survivor Messages5.0 Data Communications<ul style="list-style-type: none">5.1 Written Status Reports5.2 Resource Requests5.3 Response Time5.4 Survivor Messages6.0 Interoperability7.0 Volunteer Handling
Threat or Hazard	Extreme weather event complicated by human terrorist effort, resulting in Infrastructure failure, multiple types, leading to communications failures and risk to population
Scenario	<p>Multiple tornadoes damaging a swath across the peninsular state of Florida from one coast to the other as a result of fast moving cold front, with large number of displaced persons seeking shelter, large power outages and communications systems outages.</p> <p>2nd event was a massive explosion near an NT&T central switching site in Johnsonville, Florida, leading to massive loss of public switched telephone system performance and large damage to the "SuperNet" emergency-response cell-phone based emergency communications system.</p>
Sponsor	Florida Baptist Disaster Relief [®] , Communications & Technology Ministry

Whirlwind Boom HSEEP Scenario

- 1) **WHIRLWIND:** Band of tornadoes criss crossing the state, intense cold front.
- 2) Multiple power systems knocked off line.
- 3) Interstate highway badly damaged
- 4) 270,000 homeless, 1.9 million without power (COLD)
- 5) County public service systems badly damaged.
- 6) Volunteers called to staff facilities to assist in communications
- 7) **BOOM!** 1PM blast at “NT&T” offices in “Johnsonville” NE corner of state further destroy communications...

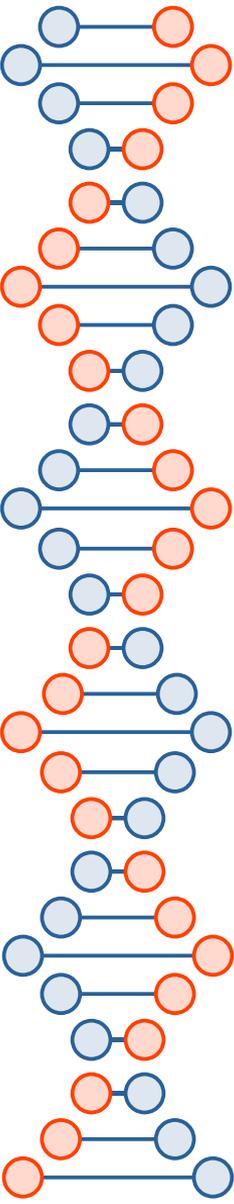


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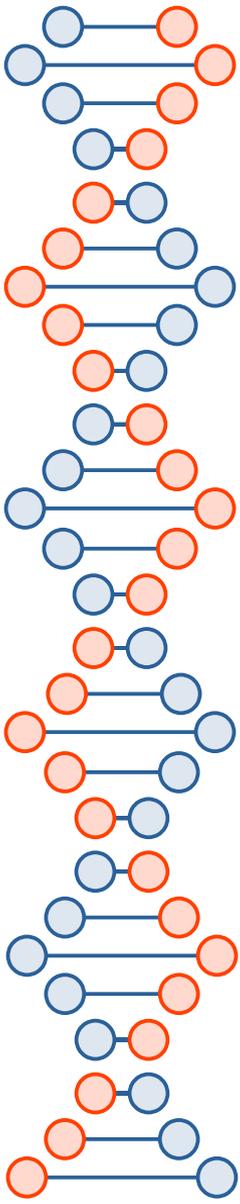
Create the TASKS for each Objective

- 1) Some tasks will be static and permanent and can be published in your ExPlan or Incident Action Plan
- 2) Others will be “INJECTS”
 - a) **Injects are what make an exercise FUN!!** They take the most work from the Planner, but create the most enjoyment for the participant.
 - b) AVOID having most participants “make up” what they need to transmit – instead create them as INJECTS that are just-in-time delivered. Then allow higher levels to RESPOND to the unexpected information relayed to them....



EOP: Structured Data Transfer Objectives

Information Transaction Level	Structured Data Format	Comment
County → State	Winlink Incident Status Report OR Agency Situation Report	Appendix D of ExPlan Filled-in Examples also provided
County Aggregation	Suggested Aggregation Form provided	Appendix D of ExPlan
Shelters → County	SHARES SPOTREP -2 OR Voice check-off list provided with similar information	Appendix D of ExPlan – Capture Reporter, Location Landline function Cell phone function Radio broadcast function TV function Water works function Commercial power function Internet function Filled-In Examples also provided

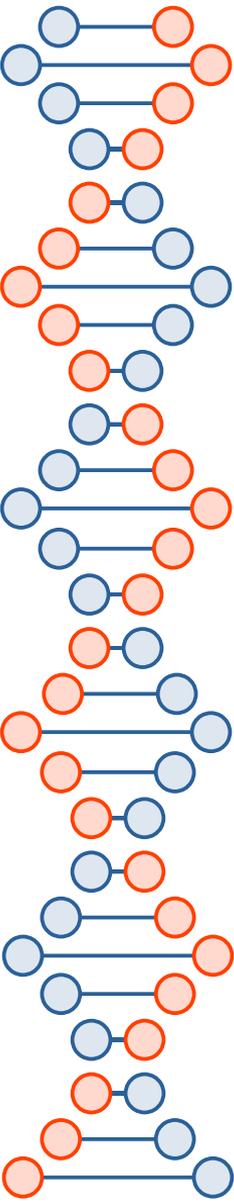


No Agreed-Upon Reporting Structures?

Most of the reviewed structured reports suitable for VOICE were **specific to the typical threat in a region** (earthquake, hurricane, etc).

I therefore chose a report from a Canadian agency that was more generic, then added specific reporting items to parallel the SHARES SpotRep-2

Agency Situation Report			
Incident/ Event Name:		Agency or Group Reporting:	
Date:		Time:	Task No.:
Prepared by:	Name	Dept/Agency	Contact Number
Current Situation: What is currently occurring within the area of responsibility for the Section/Function?			
Percent of Electrical Services Operational (0-100):			
Households without safe water:			
Status of Broadcast Communications (describe):			
Number of Persons in Shelters:			
Number of Personals Hospitalized:			
Outstanding Issues/Challenges: What issues within the current operational period still need to be resolved?			
Anticipated Priorities/Activities: What will the Section/Function priorities be during the next operational period?			
Other Comments/Issues: Are there any public information (media), safety or other issues that need to be reviewed?			

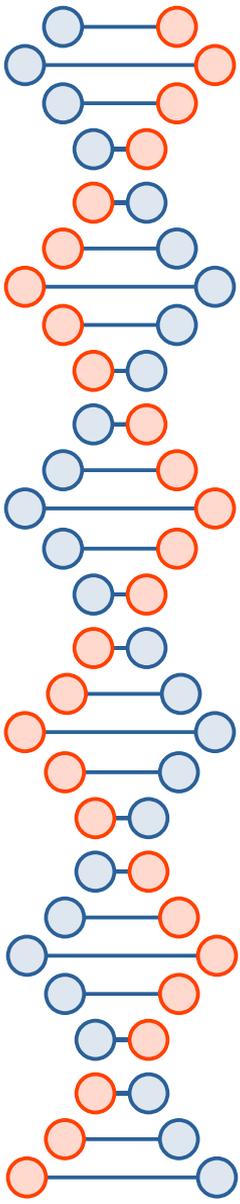


Recruit Groups To Participate

Plan 1-2 MONTHS for This Key Part

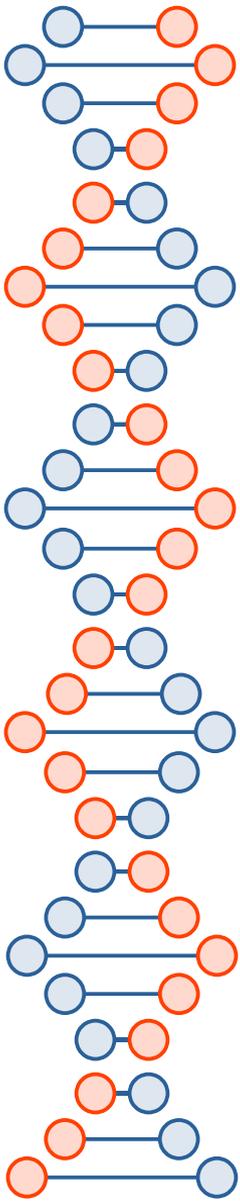
- Promotion and Organizational Tools (AVOID DROWNING)
 - COST: TOOL
 - \$0 **Simple email “groups”** on personal gmail account
 - \$0 **Website / Web authoring tool** (ancient KOMPOZER) – allows common operating picture, documents for participants.
 - \$0 **Single URL entry for Info** – crucial for guiding participant groups to information. <https://qsl.net/nf4rc/whirlwindboom.pdf>
 - \$0 **GOOGLE FORMS** – indispensable for recruiting groups / volunteers – this is a MUST.
 - (see recommended information to obtain, in the AAR/IP)

(cont'd)



(cont'd)

- \$0 **Press Releases** to friendly press (Section / State officials, ARES Letter, ARRL Letter, QST, ARRL, SHARES, FBDR) – gains wide publicity at zero cost and benefits BOTH ends
- \$0-\$150 **Zoom Conference** – to better explain the upcoming Exercise
- \$0 **HSEEP Exercise Plan Template**
https://preptoolkit.fema.gov/documents/1269813/1269865/After+Action+Report_Improvement+Plan_Improvement+Planning_HSEEP+Template_2020_508.docx/ed0e143d-2a0f-132a-b645-e871e73825ae?t=1608650336529&download=true
- \$0 **ICS Templates**
 - Simple IAP made out of ICS-201 / 205 / 205A (shorter than the HSEEP Exercise Plan) [suggest do NOT replicate in the Exercise Plan....creating extra work to keep synchronized] – **blank word-processing versions are available**
 - \$0 **Confidential ICS-205A for Exercise Planner(s)** – keeping phone numbers etc of key leaders that shouldn't be published blindly
- Groups Must Have Volunteers! We were unable to invite “technologies” – had to have real humans USING technologies: Build Your Volunteers!!



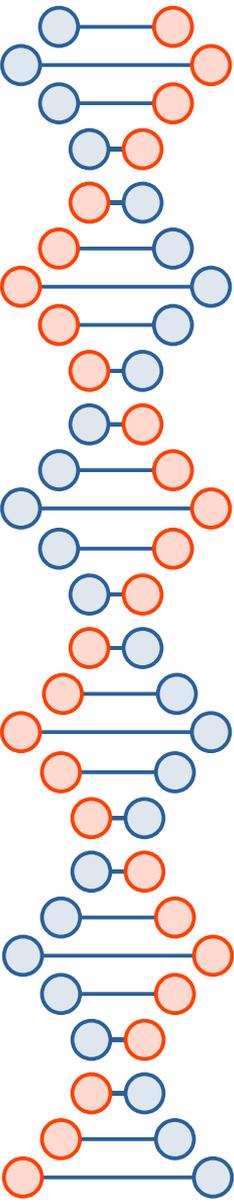
Promotion: Exercise Documents One-Stop-Shop

<https://www.qsl.net/nf4rc/whirlwindboom.pdf>

- 1) Group or Individual **registration link**
- 2) **Incident Action Plan**
- 3) Full HSEEP **Exercise Plan**
- 4) Slides from Zoom review conference
- 5) Example plans from several counties. (Not shown here)

These documents required READING. The zoom conferences helped explain to more audio-oriented participants, using slides. This exercise simulated a LOT of disaster communications.

Document	URL
Registration Google Form <ul style="list-style-type: none">• Group Leader• Individual registering who is not part of a group.	https://docs.google.com/forms/d/e/1FAIpQLSfeOZg8ehrWL_Brg45aKAq3lmlVgIvgrgY98bwup2ycwMF3BQ/viewform?vc=0&c=0&w=1&flr=0&gxids=7628
Incident Action Plan (for radio communications portion)	https://qsl.net/nf4rc/FBDR/2021/2021WhirlwindBoomICS201.pdf
Exercise Plan (full HSEEP-based documentation)	https://qsl.net/nf4rc/FBDR/2021/2021WhirlwindBoomExercisePlan(Particpant).pdf
Information about a real-life communications issue faced by Cedar Rapids, Iowa just last summer.	https://qsl.net/nf4rc/FBDR/2021/FailureOfVolunteerUtilization.pdf
Slides from the March 4th Zoom Conference going over this Exercise (as amended)	https://qsl.net/nf4rc/FBDR/2021/ZoomConferenceSlides.pdf
Tutorial on reading encrypted INJECTS delivered by email	https://qsl.net/nf4rc/FBDR/2021/EncryptedInjectTutorial.pdf



Promotion: Getting Groups Together

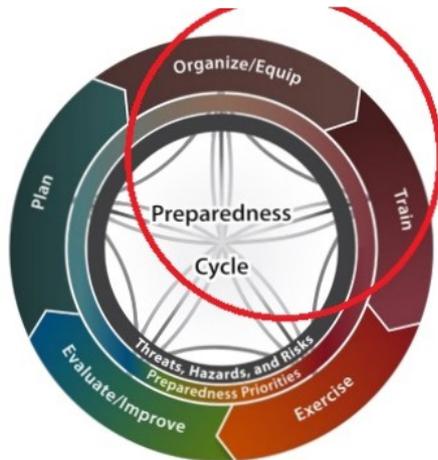
- 1) Key Principle: **Volunteer effort.** In this case the exercise planner has no **AUTHORITY** to force participation, and there are no financial rewards for participation. This calls for a lot of gentle persuasion, providing
 - a) Well thought-out plan for participation
 - b) Clear objectives
 - c) Vision of the benefits to be obtained
 - d) Appreciation for volunteer effort

Intermediate Result: County-Based Exercise Plans

Key Point of Objective 3.0 was local group planning: *Emergency Managers were encouraged to take control and adjust local planning to accomplish their local goals.*

Large range of local plans, from very new participants to professionally-constructed EM plans.

This was EXTREMELY well received.



At the county and individual group level, organization and training were going on in preparation.

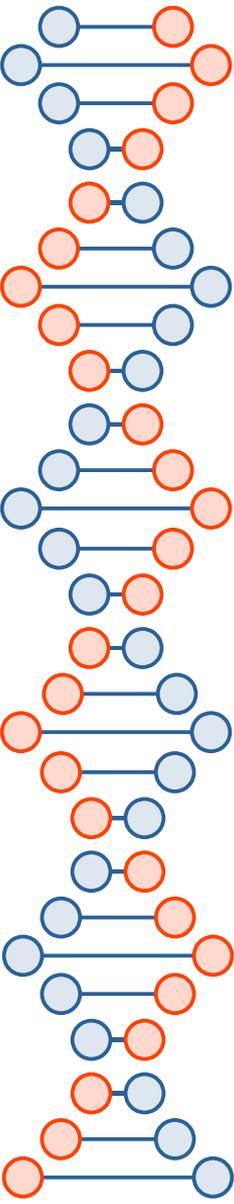
Figure 2.1: The Integrated Preparedness Cycle



Flagler County Whirlwind Boom 2021

Exercise Plan
March 19, 2021

The Exercise Plan (ExPlan) gives senior leaders, observers, media personnel, and players from participating organizations information they need to observe or participate in the exercise. It includes an exercise overview, objectives and aligned capabilities, roles and responsibilities, logistics, schedule, and communications plan. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials that are necessary to their performance. All exercise participants may view the ExPlan.



Exercise Planner Hindsight Tips

1) ASK FOR HELP AT EVERY CHANCE POSSIBLE!!!

a) Extreme reticence of people volunteering to help when everyone is so new at HSEEP....

2) KEEP A TIMELINE SET OF NOTES – you will need to know exactly what happened when, what you asked a contact for, and what you promised another contact!

3) As groups join and begin to create their own documentation (Exercise Objective 3.0) – with permission, PUBLISH those as examples to others

a) Multiple examples were published of Local comms plans for this exercise

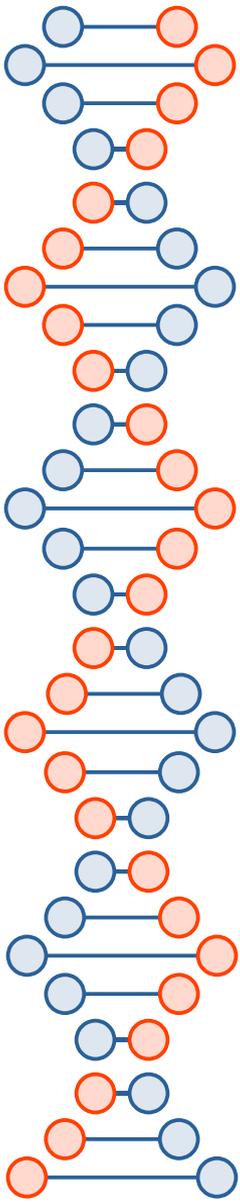
Mechanics: INJECTS

Used a simple set of “tables” in a word processor and cut and paste to create injects.

This makes them look somewhat professional.

TEAM	ALACHUA COUNTY ARES(R) -- EOC
SESSION	ONE

TEAM	ALACHUA COUNTY ARES(R) -- EOC
SESSION	ONE
INJECT	<p>Your county heavy equipment is in VERY short supply for extricating trapped persons and one utility yard is blocked by fallen trees.</p> <p>Your county's stored potable water cache was destroyed by a building collapse.</p> <p>Your county Search and Rescue teams are also in very very short supply and you're having problems reaching them.</p> <p>Your EM Bob Alpha requests that you request deployable water for 5,000 persons ASAP, 3 excavators and 4 search and rescue teams from State using an ICS-213RR form over his signature.</p>



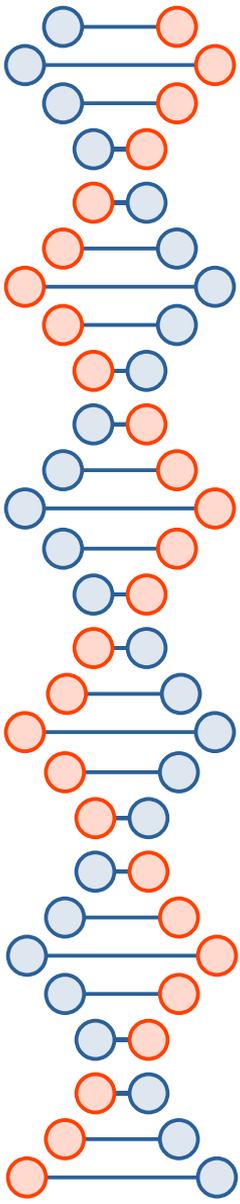
Mechanics: Making (Secret) Injects Efficiently

INJECT LEGEND	
INJECT TYPE	COLOR
No Utility Power	Blue
Antenna Issue	Green
Shelter Disturbance	Red
Station Disappears	Grey
Equipment Issue	Orange
Nearby Emergency	Yellow

TEAM	Session One	Session Two	Session Three
R Bapt Dis. Relief	POWER SATEL	Power & Generator Failure	PWR, GEN SATEL
Alachua EOC		Antenna Failure	Antenna Failure
Alachua #1	Antenna Failure	OK	

After a while, I got much more efficient at generating injects. One County can't "see" the next County – so you can re-use a set of injects. At the county level you create GREAT training situations with all kinds of horrendous problems happening, different at every shelter.

Alachua #2	PWR SICK	PWR	PWR
Alachua #3	Bldg Collapse	OK	OK
Alachua #4	ANT Fire	OK	OK
Alachua #5	PWR SHOTS ²¹	PWR	PWR
Alachua #6	PWR Bldg Col.	PWR	PWR
Alachua #7	PWR Disturb.	PWR	PWR
Alachua #8	PWR FIRE	PWR	PWR
MARION EOC	TREES	OK	OK
Command NCS	BLDG COLLAPSE	OK	OK
Data NCS	PWR Violent	PWR	PWR
Resource NET R.A.W.	PWR FIRE	PWR	PWR
Shelter P.B.	PWR ILL	DISAPPEAR	PWR
Shelter L.J.	PWR SHOTS	PWR	PWR
Additional Shelter	PWR LEAK	PWR EVAC	PWR EVAC
COLUMBINE EOC	OK	OK	OK
SHELTER MH	PWR ILL	PWR EMBERS	PWR
SHELTER MP	PWR LEAK	PWR CAVE IN	PWR
SHELTER GB	PWR SHOTS	PWR ILL	PWR
SANTA ROSA EOC	ROLL EMAIL	RUMORS	



Mechanics: How to Distribute Injects?

Goal is to have them remain UNREAD until the right point in the Exercise – unexpected impact.

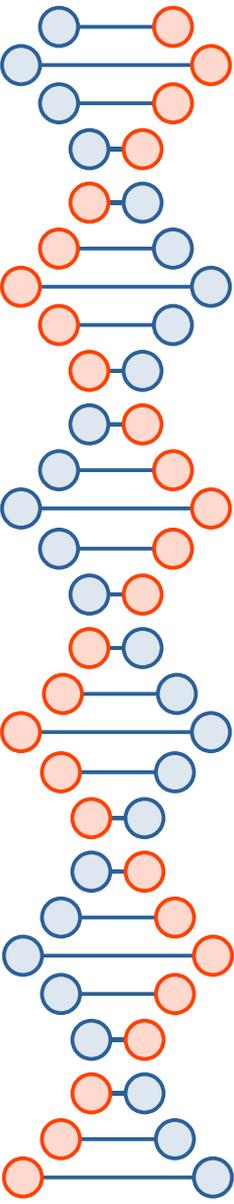
First technique: Sealed envelope for each session, packet for each shelter, package of packets of envelopes for each County. **Worked well!**

Late-comers got encrypted messages delivered by email, with encryption keys delivered separately. **Too confusing!** Work out easier way to distribute electronically.

Enterprising county leaders stepped up and wrote their own injects where I fouled up.... Good job!!



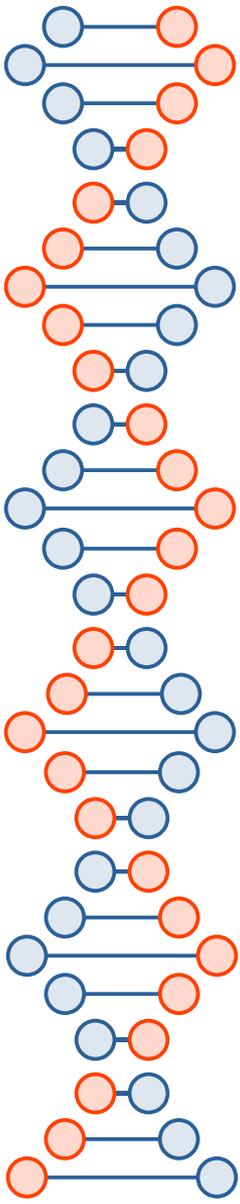
Edge-glued packets ready for Priority Mailing to County Groups.



An Aside: Benefits

1) **Get To Know other groups – probably #1**

- a) Many participants had never heard of SHARES before this Exercise. No understanding of support SHARES can provide, opportunities for multi-faceted communications techniques, ease of gaining licensure
 - b) The Florida Baptist team was quite green with little exposure to ARES® or other groups.
 - c) ARES® leadership often has years of experience working with counties / state officials.
- 2) Test out gear, people, strategies
- 3) Rub shoulders with other teams – tensions and frictions easier to deal with in an exercise than in real disaster



Cavalry Arrives: Red Cross Volunteers!

- 1) Wayne Robertson K4WK – and his team of exercise creators Atlanta, Ga – manage the largest group of active volunteers
- 2) Added DOZENS of volunteers to Whirlwind Boom & 13 states – for which I was unprepared
- 3) RESOURCE NET was crucial for absorbing these Individual Resource Units on the night of the Exercise.
- 4) Unexpected addition to the original ExPlan that truly took us beyond proper span of control...



The Day Arrives

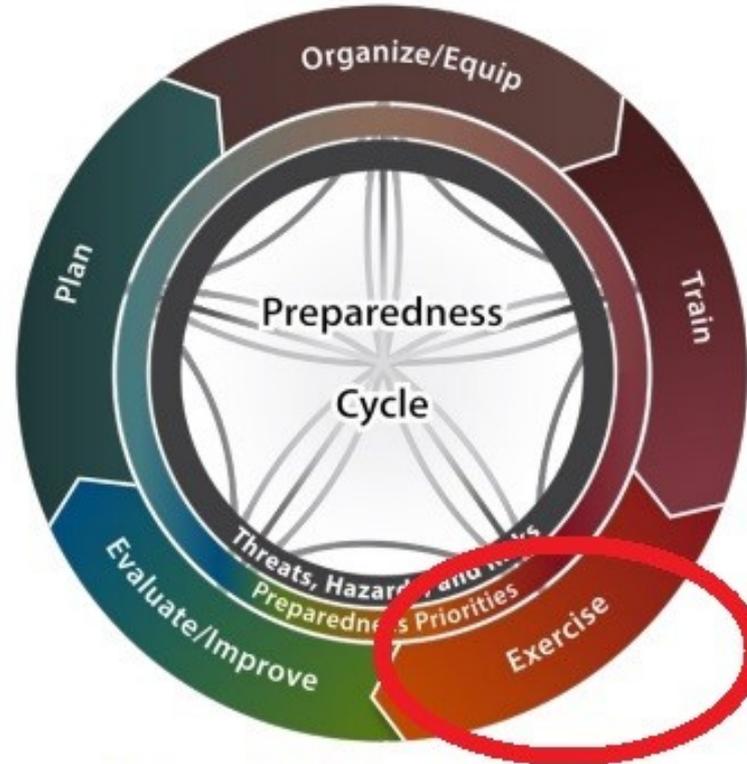
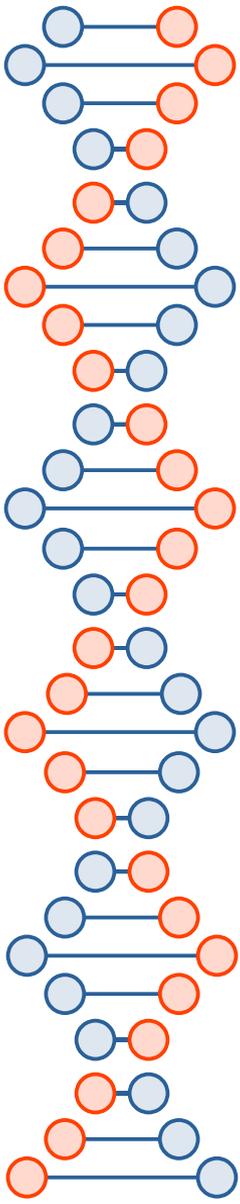


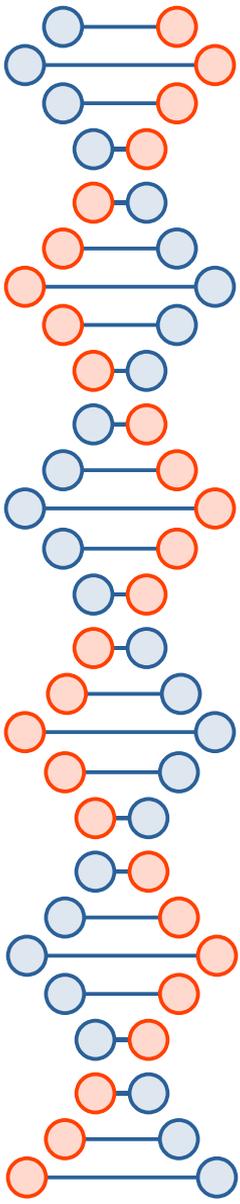
Figure 2.1: The Integrated Preparedness Cycle



Mechanics: Documenting exercise



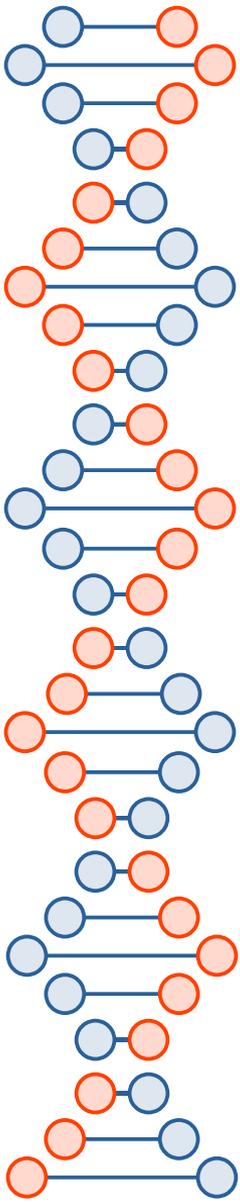
Exercise needs some immediate help if something goes awry – have a PLAN for monitoring and fixing on the fly!



Initial Instructions

The INITIAL INSTRUCTIONS GIVEN for the beginning of Session One were:

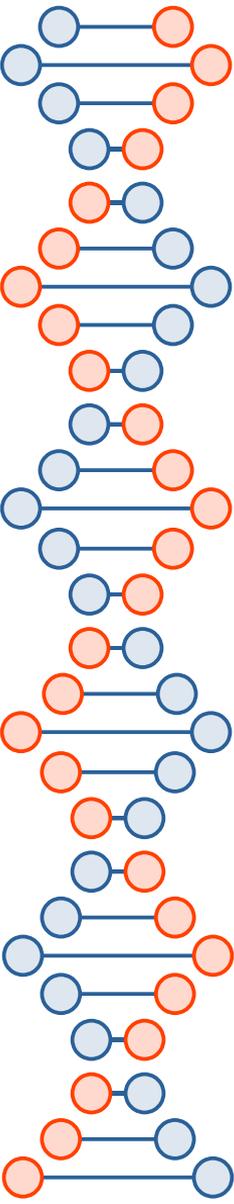
Exercise Date / Time	Personnel	Activity	Location
Friday March 19 2021 Daytime BEFORE the Exercise	All participants	<p>ANTENNA Each group is encouraged to begin the exercise with any suitable antennas normally present at their location, but if in a deployed position, to have already erected suitable antennas.</p> <p>ALL groups are warned to be ready to erect replacement antennas as Injects are likely to indicate that existing antennas are unusable.</p>	Exercise participant location.
Friday March 19 2021 Daytime BEFORE the beginning of the exercise 7 PM	All participants	<p>EMERGENCY POWER Each group is encouraged to begin the exercise either on emergency power (including lighting) or to be ready to move expeditiously to emergency power if Injects down their existing power.</p> <p>Note: participants working from their home locations should be ON or prepared to go to full EMERGENCY POWER for all radio communications including lighting.</p>	Exercise participant location.
EXERCISE BEGINNING			



3 Sessions

- 1) Session 1 and Session 2 involve various catastrophes at stations and around simulated peripheral unit.
- 2) Antenna failures, power failures have to be dealt with....fires, gun battles, explosions, floods etc have to be reported despite the handicaps.
- 3) By Session 3 things settle down – put a requirement in Session 3 that participants make certain **REPORTS** – makes your result capture much easier.

Results - Participation

- 
- 1) Florida Baptist Disaster Relief
 - 2) SHARES SE Regional Net – Also covered Interoperability Freq!
 - 3) Alachua County
 - 4) Colombia County
 - 5) Flagler County
 - 6) Madison County
 - 7) Marion County
 - 8) Santa Rosa County
 - 9) Suwanee county
 - 10) Taylor County
 - 11) Volusia County
 - 12) Net controls – Command and Resource Nets!
 - 13) **Many** Red Cross-related “Individual Resource Units” – limited by propagation / signals
 - 14) Total of at least the 85 known participants, possibly many more that I missed.

Results - Nets

1) County Nets – Moved LARGE amount of structured reports.

2) Ham Resource Net – well functioning

a) Moved capable volunteers to Command Net

3) Ham Command Net – green new volunteer NCS did fantastic (tended to take on too much work) [an attempted PSK31 net also occurred!]

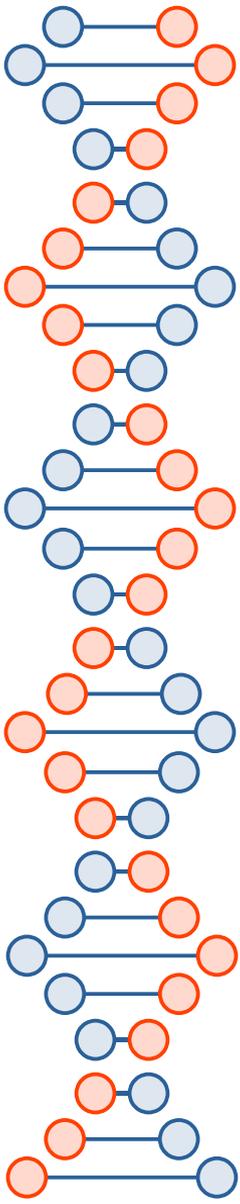
a) I monitored green volunteers moving traffic out of State

4) SHARES SE Net Up / Running / Interoperable!!

a) Unfortunately I lost them within 30 minutes

5) 40M Malicious Interference documented

6) HF Voice Nets tended to handle edges of traffic, not as much as HF WINLINK



Results: HF (Public) Winlink Gateways Utilized

Information gathered from “Winlink Window” [available 21 days]

Note States and frequencies used.

Unable to visualize SHARES gateways due to confidentiality.

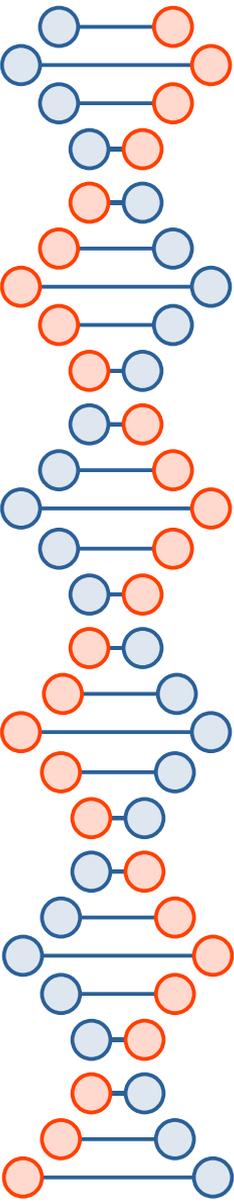
#	Gateway	Frequency (MHz)	# of utilization	State	Approx Distance
1	KB5OZE	10.145	2	LA	450
2	AB4NX	7.103	4	GA	350
3	N5TW	145.030	2	TX	900
4	N4SER	3.595	2	FL	100
5	W1SP	145.030	2	CT	local to user
6	AK4SK	7.064	2	VA	200
7	K5SZ	145.030	1	TX	local to user
8	K6MBY	7.102	4	WA	2400
9	WA5TED	14.065	1	TX	1100
10	K9KDJ	7.103	1	IN	600
11	K4FEM	3.591	3	GA	300
12	KB5HCD	14.103	7	TX	750
13	K4SRC	145.090	2	FL	local to user
14	AB4NX	3.589	1	GA	350
15	K4PAR	7.104	1	GA	250
16	WW4MSK	3.593	2	GA	300
17	N5TW	10.148	1	TX	900

Adequate Data Bandwidth?

HF Ham Bands Used by Agencies

Band	Number of Gateways Utilized	Agency Usages	MHz of space allotted for usage
80 M	4	8	0.015
40 M	5	12	0.005
30 M	2	3	0.010
20 M	2	8	0.016

That 40 meter gateway slot looks over-used!! SHARES provided a very nice alternative for the capable groups.



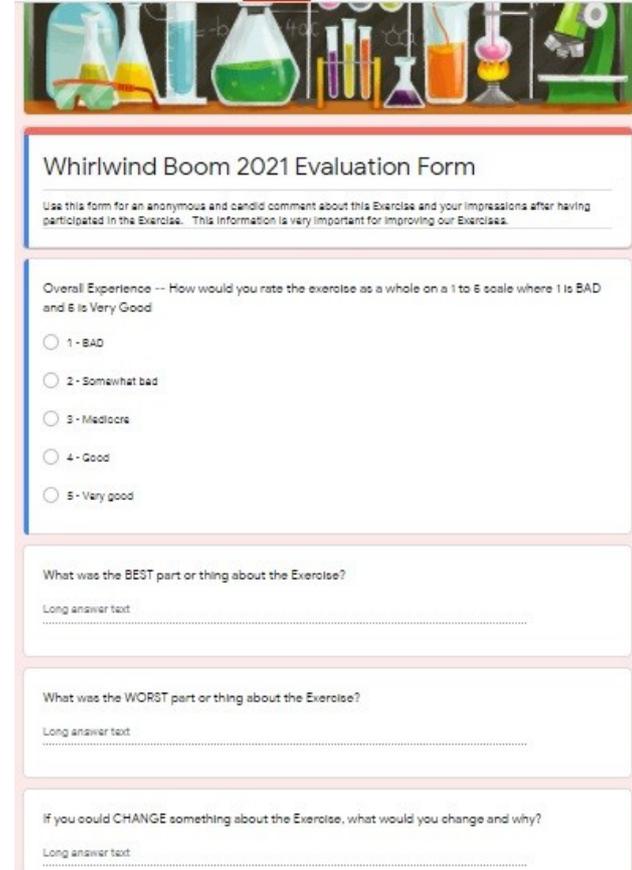
Hundreds of Structured Messages

	<u>Voice</u>	<u>Data</u>	<u>Total</u>
Counties	228+	64+	330
Ind. Res. Units	7	11	18
“State”	Receive 53, Transmit 31 =		84
TOTAL			431+

Accomplished in a two-hour exercise.

Feedback Capture Techniques

- 1) Immediate HotWash via Zoom (strong participation)
- 2) Anonymous Google Form (12 responses)
- 3) Analysis of public WINLINK transfers



Whirlwind Boom 2021 Evaluation Form

Use this form for an anonymous and candid comment about this Exercise and your impressions after having participated in the Exercise. This information is very important for improving our Exercises.

Overall Experience -- How would you rate the exercise as a whole on a 1 to 5 scale where 1 is BAD and 5 is Very Good

1 - BAD

2 - Somewhat bad

3 - Mediocre

4 - Good

5 - Very good

What was the BEST part or thing about the Exercise?

Long answer text

What was the WORST part or thing about the Exercise?

Long answer text

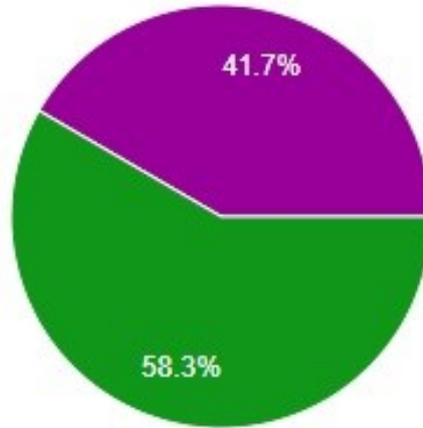
If you could CHANGE something about the Exercise, what would you change and why?

Long answer text

Notable Anonymous comments

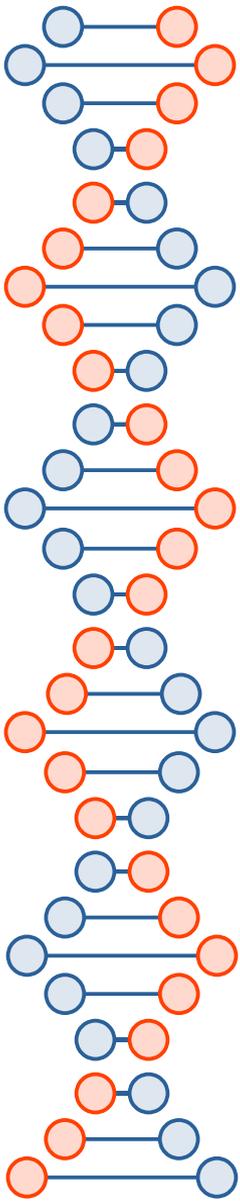
Overall Experience -- How would you rate the exercise as a whole on a 1 to 5 scale where 1 is BAD and 5 is Very Good

12 responses



- 1 - BAD
- 2 - Somewhat bad
- 3 - Mediocre
- 4 - Good
- 5 - Very good

42% "Very Good" 58% "Good"



Best Parts

What was the BEST part or thing about the Exercise?

12 responses

A lot of stations checking in and passing traffic

Getting to participate as an individual

Being able to prepare and practice. Injects were well written and useful.

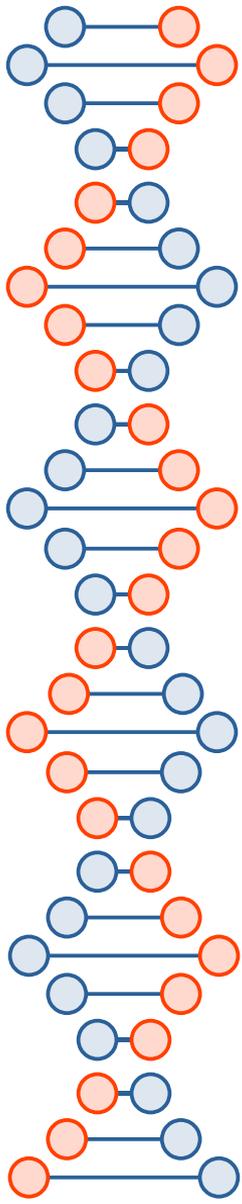
Many modes utilized

We had 8 people participate, expected 2

As a newcomer, I gained some understanding of how I could help out in an actual disaster. The whole thing was out of my frame of reference, but the experience helped fill in the frame of reference so I might understand things better the next time. I understand passing Radiograms and messages, but the overall structure of how something like this works was beyond me. Things are coming more into focus now.

Being able to utilize shares digital for moving traffic. This proved to be very useful.

It's breadth to include outside stations. The overall plan was very ambitious.

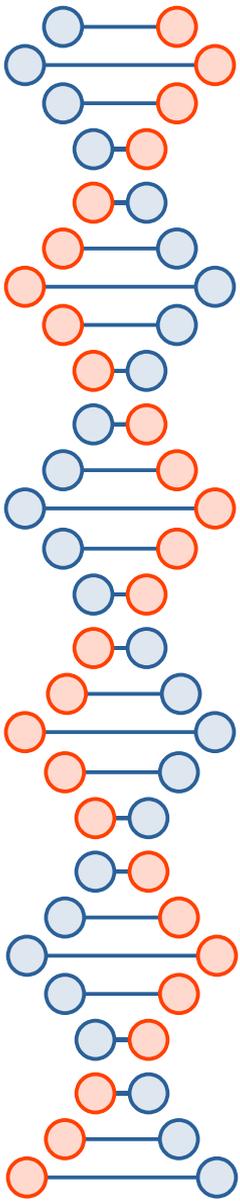


Sending traffic via Winlink

As part of the out of state SHARES net, we had limited communications from Florida. We were monitoring the Primary - SCG0, the Interop (5330.5) and Winlink. We received minimum traffic. Excluding ourselves, we had 7 stations contact us. There was one request for traffic from Florida (no traffic was passed). Two stations contacted us on SCG0, one station contacted us on both SCG0 and the Interop and six stations contacted us on the Interop frequency. six messages were sent and acknowledged over Winlink. One station sent multiple messages by Winlink using forms that were responded back to with Winlink response forms. No messages were sent or received that event messages. All winlink messages were "real world" messages.

Exposing Ham radio operators to HSEEP and ICS

Demonstrating the capability of HAM radio to provide communications during a grid down emergency.



Worst Parts

What was the WORST part or thing about the Exercise?

12 responses

I was an individual operator in Connecticut. I was unable to make contact on 40M or 80M voice although I could hear the net on 40M a bit.

Having to participate as an individual.

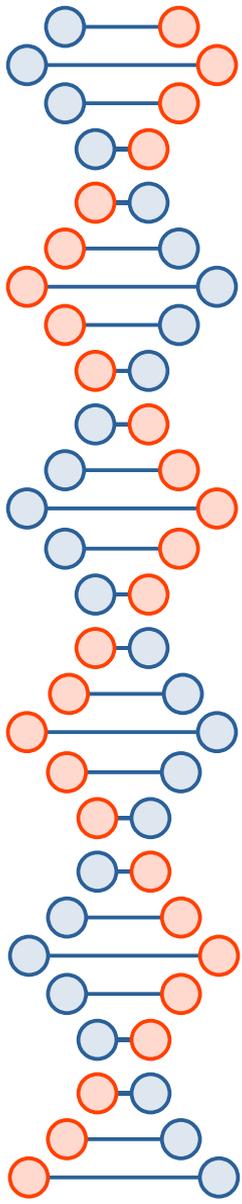
Not a lot of activity for stations outside of the disaster area. Most of the time was spent listening rather than participating.

Can't say

Not sure why yet, but one shelter transmitted nothing!

As a new volunteer, I wanted a simple "you do this" instruction. "You tune in here and be prepared to take messages" (or whatever). The event was obviously well planned, but I sometimes my personal mission got lost in the massive planned-out details. I'm still not sure what my mission was, but I hope I was a help.

Excessive noise levels on all voice frequencies,. Unable to check in on shares voice, probably should have tried interop channel. Lesson learned.



My distance from FL. It would've been great to hear more of the action

Sending traffic via voice

I'm not sure many stations were were aware of the out of state SHARES part of the event. I can not speak about what went on in Florida, but on the out of state SHARES side, we had not event messages and very limited communications. Most was multiple transmissions from the same stations.

Command net was not really involved, need to have "big picture" section level ARES management issues to work on

Nothing. Honestly, nothing. The entire exercise was extremely well developed. It was challenging but not impossible.

Florida SERT-TRAC Accepts Certificates



Certificates are easy to do in word processor and benefit the participants as well as the effort of holding exercises. Florida SERT TRAC is the recognized repository of training / exercise completion.
<https://trac.floridadisaster.org/trac/loginform.aspx>

AAR/IP: FEMA TEMPLATE

1) FEMA Word-Document AAR/IP Template

a) <https://preptoolkit.fema.gov/web/hseep-resources/improvement-planning>

2) Funky FEMA Format but just flow with it and fill it in!

3) Output to PDF

4) **Post for comments & Adjust!**

[Exercise Name]

After-Action Report/Improvement Plan

[Date]

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine and related frameworks and guidance. Exercise information required for preparedness reporting and trend analysis is included; users are encouraged to add additional sections as needed to support their own organizational needs.

After-Action Report/Improvement Plan (AAR/IP)
Homeland Security Exercise and Evaluation Program [Sponsor/Organization] Rev. 10/20/08

[PROTECTIVE MARKING, AS APPROPRIATE]

1

Notable **Improvement Plan** Items

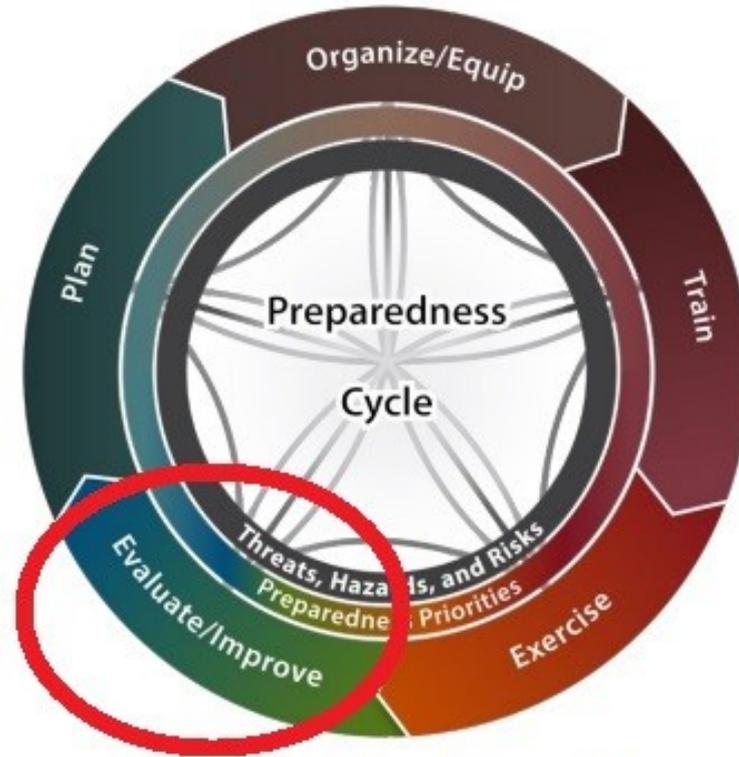
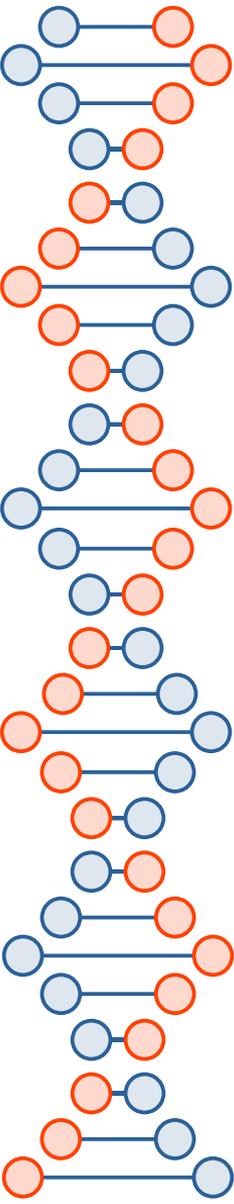


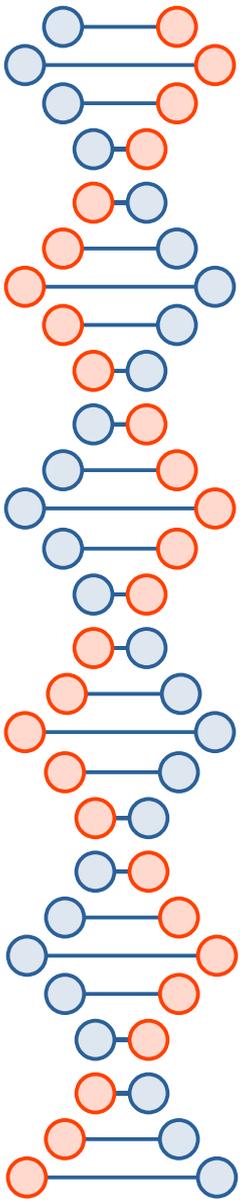
Figure 2.1: The Integrated Preparedness Cycle



Notable Improvement Plan Items

21 Items Total

- (1) Improve readability & get participants to READ documents
 - (2) Single URL Entry Point is vital.
 - (3) Google Form registration from the start!
 - (4) SPAN OF CONTROL: get more help!
- Various equipment failures discovered / fixes
- (5) Improved buy-in from various leadership
 - (6) [HF Ham Net Control difficulties: improved training]

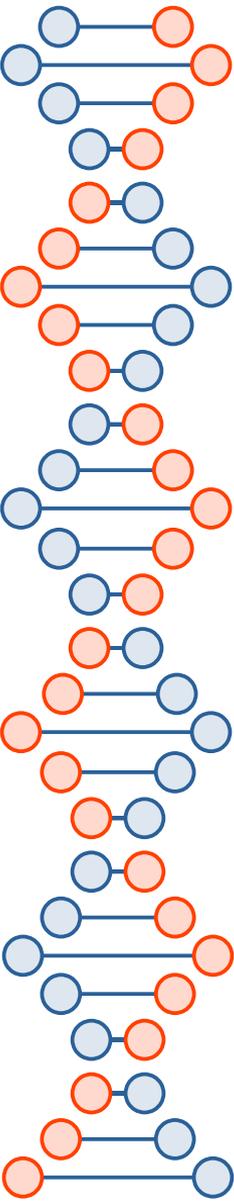


(13) Improved usage of noise-tolerant data modulations--
Stations had trouble with noise / communications

(15) Better understanding of Shares Program Office procedures

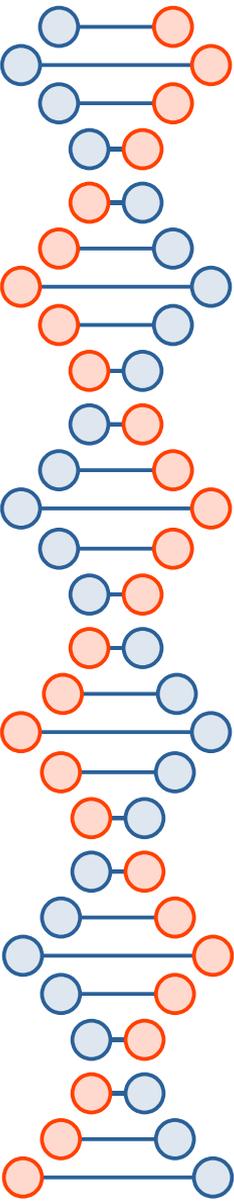
(18,19) Work-arounds for overwhelmed ham RMS stations

(20,21) More agency involvement @ County level to lead to better Resource Requests



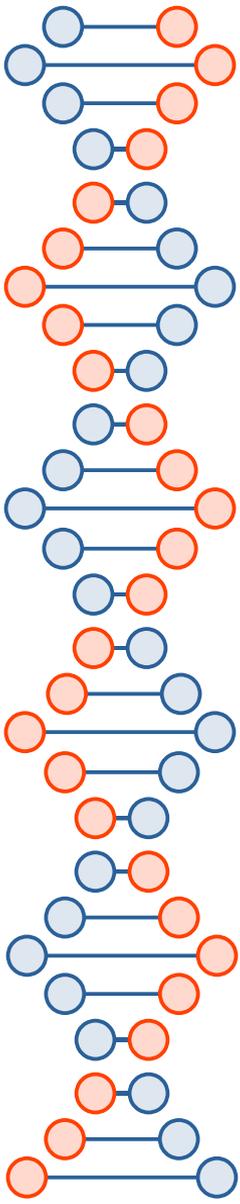
Suggestions to improve SHARES usage in next Exercise

- 1) SHARES WINLINK – [We couldn't measure] Alachua County found this extremely helpful with overloaded amateur RMS's –
 - a) more common knowledge of SHARES
 - b) more Florida counties licensed / PACTOR-equipped would increase SHARES RMS utilization
 - c) need a way to measure
- 2) State EOC could increase involvement – we only had an email / one volunteer [very grateful for that volunteer!!!] This type exercise is CHEAP – a freebie almost for the State of Florida!!
 - a) add **TELEPHONE #** – **might have increased voice traffic**
 - b) Add **ALE address** – **might have allowed ALE**
 - c) **Formalize and support the fledgling SUPCOM program** [good news: MARC units to get SHARES HF]
- 3) Signal Strength-- **a problem.**
 - a) Add NCS stations? Dependent on time of day, frequency – tough to predict!
 - b) Use advanced data modulations with 20+ dB advantage over voice? (PSK31 / JS8 / narrow VARA, narrow PACTOR, others?) [Need solutions that work pretty much any time of day – advantage of ALE!]
- 4) Develop ALE Volunteers to participate, come up with protocols to allow larger structured messaging (move to peer to peer Winlink or PSK31 or other mode??)



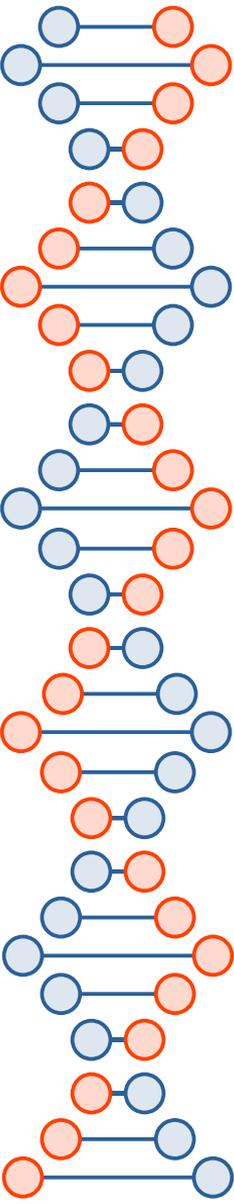
Grateful Acknowledgments

- 1) **FBDR Comms Team** – willing to dive into their first exercise
- 2) **NFL ARES® SEC Karl Martin** – promoted and supported the exercise
- 3) **Richard Rideout / Ross Merlin** – promoted & supported & assisted – and the volunteers on the SE Net that night.
- 4) **NFL ARES® Net Leadership & NCS's** – great job on both resource and command nets
- 5) **Red Cross Volunteers & Wayne Robertson** – The Cavalry!
- 6) **ARRL Leadership / Rick Palm** etc. – Incredible promotion on short notice!
- 7) **MULTIPLE County EM / ARES Leadership** who rose to the challenge



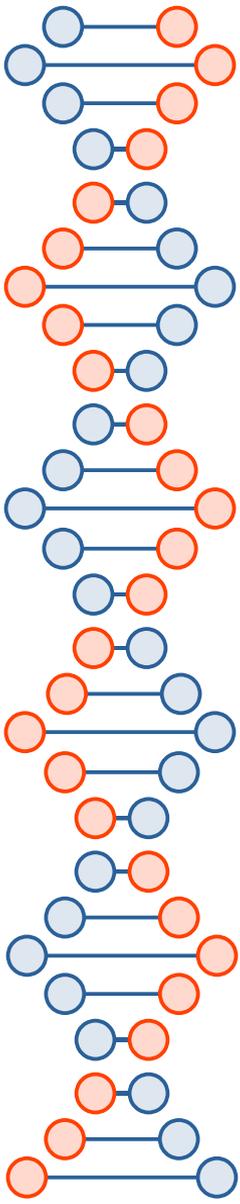
Software Utilized

- 1) Libre Office for Documents, Slide Shows (\$0)
- 2) KOMPOZER – \$0 ancient & simple web hosting software, free hosting on qsl.net
- 3) Winlink Express – \$0
- 4) Coffee Cup FTP - \$0 - for web files
- 5) Google Gmail / Google Forms \$0



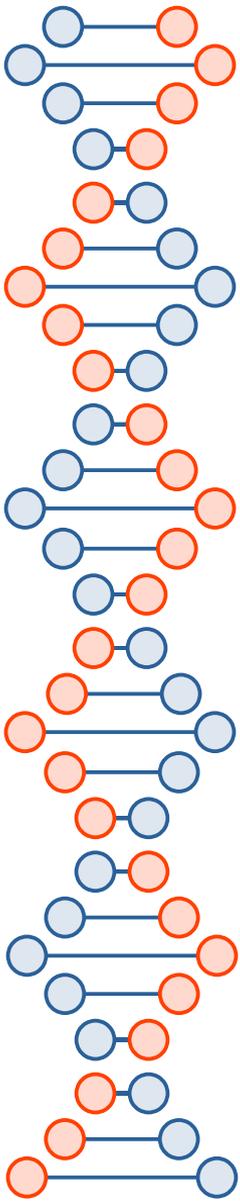
This is a Winning Effort

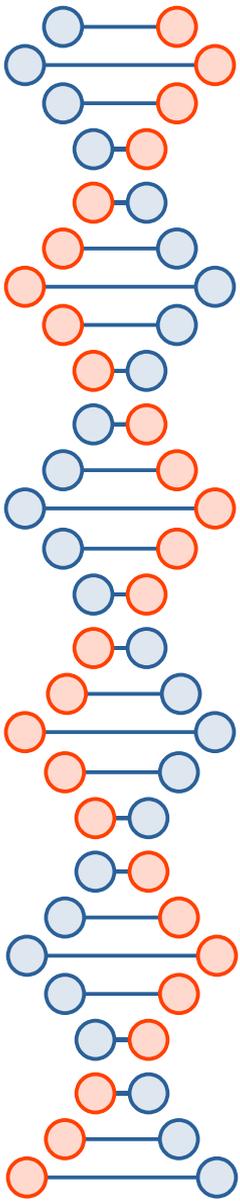
- 1) Holding an Exercise brings about more good than you would have even planned
 - a) **New Relationships** – the Real Interoperability
 - b) Discoveries of Issues
 - c) Skill Improvements
 - d) Asset Improvements
 - e) Strategy Improvements
- 2) Strongly recommended for SHARES Regions!



What We Covered

- 1) HSEEP relationship to Emergency Operations Plan.
 - a) Fuzzy extant emergency operations plans for backup volunteer radio groups if called upon.
- 2) The Genesis of Whirlwind Boom 2021
- 3) Step by Step how an HSEEP-based Exercise was developed, executed, analyzed.
- 4) The Results
- 5) What we learned – what needs to be improved
- 6) **Huge benefits of regular HSEEP-based Exercises to the SHARES community.**





Local CheckOff Prep Lists

Check Off	Preparation Item
<input type="checkbox"/>	If part of a group, have you received an assignment?
<input type="checkbox"/>	If part of a local group, have you received an ICS-205 giving any local frequencies that will be utilized? (The Exercise Plan focuses on state-level communications.)
<input type="checkbox"/>	Do you have suitable antennas plus the ability to replace them in timely fashion?
<input type="checkbox"/>	Do you have backup power available? Will it include LIGHTING?
<input type="checkbox"/>	Are you able to check your output power?
<input type="checkbox"/>	Are you able to create the necessary voice or digital modulations?
<input type="checkbox"/>	For data operations, can you successfully operate your computer simultaneously with your radio, or are there lockup or interference issues?
<input type="checkbox"/>	Are you familiar with the FORMS that are requested to be used in this Exercise?
<input type="checkbox"/>	Are you familiar with the software and systems that may be required during this Exercise?

<input type="checkbox"/>	If you are fulfilling a leadership or county-level role, can you monitor both HF and VHF/UHF comms simultaneously if necessary?
<input type="checkbox"/>	Have you acquired the Survivor Message forms and possibly already completed one or more, or had family/friends complete one? This is a useful familiarization process.
<input type="checkbox"/>	Do you have a copy of band plans (amateur) or net channels (SHARES) available to you?
<input type="checkbox"/>	Do you understand how to embed an ICS-213 into a Radiogram or how it might come to you?
<input type="checkbox"/>	Have you or your local leader registered your planned participation?
<input type="checkbox"/>	If you are the leader of a local group, did you receive INJECT materials by two days prior to the Exercise? If not, you may wish to contact the Exercise Director to check.

