

Radio Communications Essentials

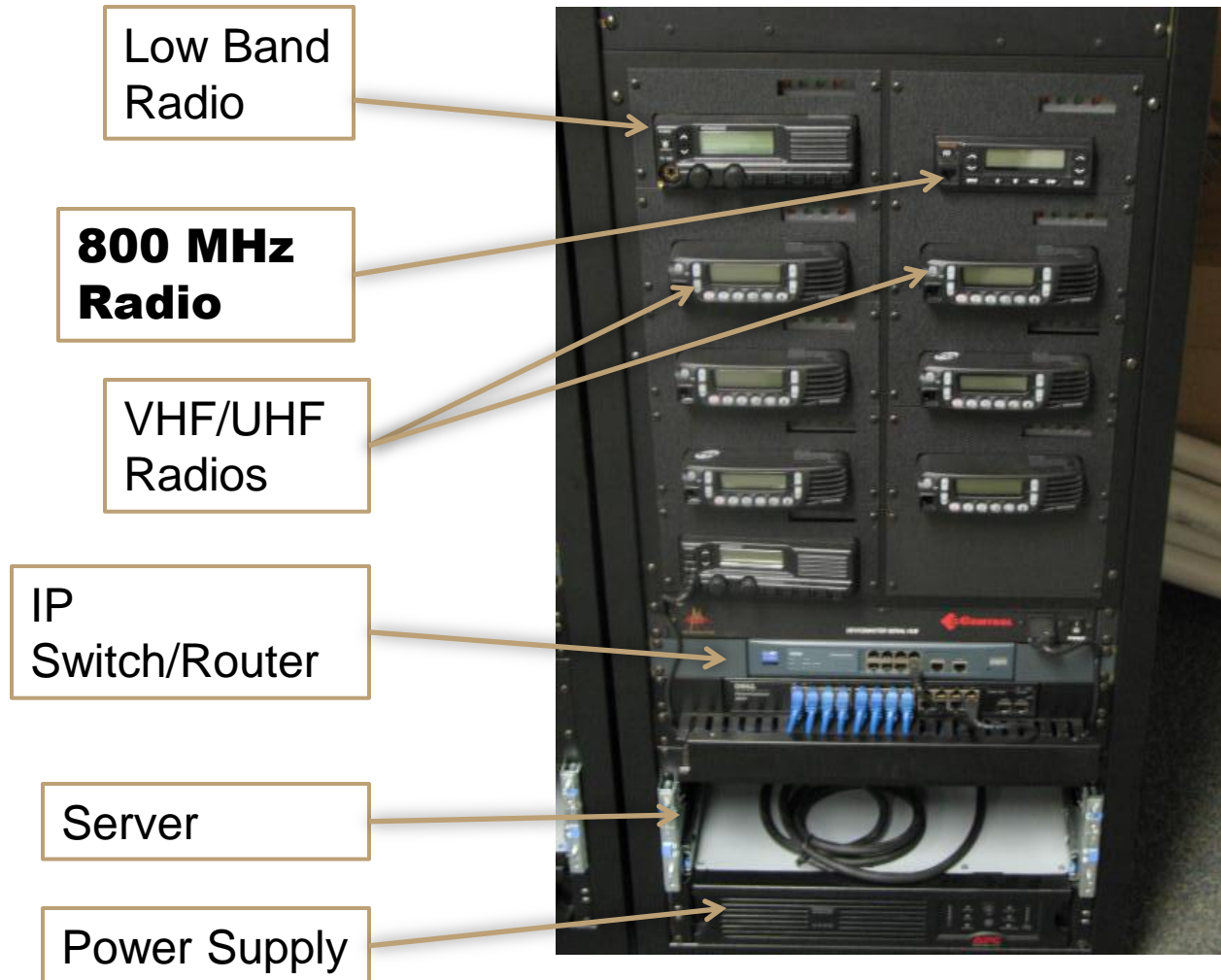
Module 6: Paraclete/Interoperable Solutions
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Paraclete©/Interoperable Solutions

What is it???

Paraclete© is a software developed by Interoperable Solutions of Tempe, AZ that utilizes Internet Protocol (IP) and a IP based switch to control frequencies, telephone and/or radio operations from any computer with connectivity.

What is Paraclete?



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Brief History in Nebraska

- The Central Nebraska Radio Interoperability (CNRI) group was formed from all levels of emergency response agencies within the South Central part of Nebraska in 2004 then added the Southwest Region in 2007 along with Clay, Webster, and Nuckolls counties.
 - The CNRI groups signed inter-local agreements to allow for the sharing of each other frequencies to aid in the FCC licensing requirements.
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- The installation allowed each site the ability to patch together several types of radio resources within an agency or a region if within the **footprint** of the tower being utilized for the use.
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Outside
the foot
print for
field use

5-30 Miles
for mobile
radios

2-5 Miles for
portable
radio



Sustainability Issues

- Connectivity
 - Training (Ongoing)
 - Network-Server, routers, & switches
 - Radios
 - Power Supplies-Generally batteries
 - Antenna/Cables
 - Software upgrades
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Success in Nebraska

- The South Central area has some Public Safety Answering Points (PSAP's) that use the system daily to maintain competency and to verify operation.
 - System was used during “2006 Ice Storm”, several multi-agency wildland fires and training exercises.
 - System has grown nearly to reach the entire State of Nebraska.
 - Testing has been done on using Paraclete to control base stations for the “National Interoperable” frequencies.
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Problems in Nebraska

- Lack of training at the local level on the use of the system from the responder up to the PSAP operators
 - Lack of continued use of the system to maintain competency by the trained agency staff.
 - PSAP's are too reliant on the normal day to day equipment that works with little problem.
 - Lack of good broadband connectivity across the state.
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Console VS Paraclete

- **Console**

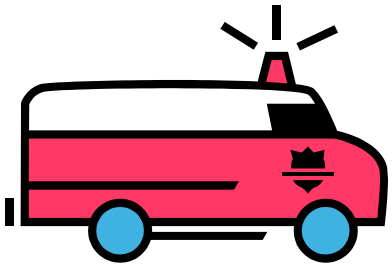
- Multiple single “boxes” representing in some cases one channel each.
- Ability to make one “Patch” for multiple channels.
- No second Patch
- No adding of channels
- Alert notification capability.
- Remote control of door locks and openers.
- Paging for responders.
- Mapping for incident locations.
- Mapping for Hazardous Materials incidents.
- Capable with enhancements to operate on the State Radio System (SRS)

- **Paraclete**

- Multiple single “boxes” representing up to 500 channels per box.
 - Ability to make a minimum of seven patches.
 - Can add, change or remove channels from each “Box”.
 - Can use .wav files to record audio, save files and playback over the air.
 - No alert tone function used at this time.
 - Implementation of pre-made communication plans.
 - Ability to talk on neighboring channels during Emergency Operations.
 - Ability to monitor neighboring channels.
 - Ability to communicate directly with other PSAPs.
 - Can’t control door locks....yet.
 - Dispatch Instant Messaging
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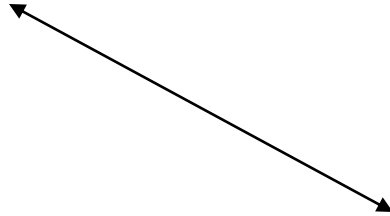
Example

- An ambulance is traveling along a rural Nebraska Highway with a patient on-board when they come upon a vehicle stopped along the roadway and a lady flagging them down in distress. Her husband is in need of an ambulance and the loaded ambulance needs to call for assistance from the locals.
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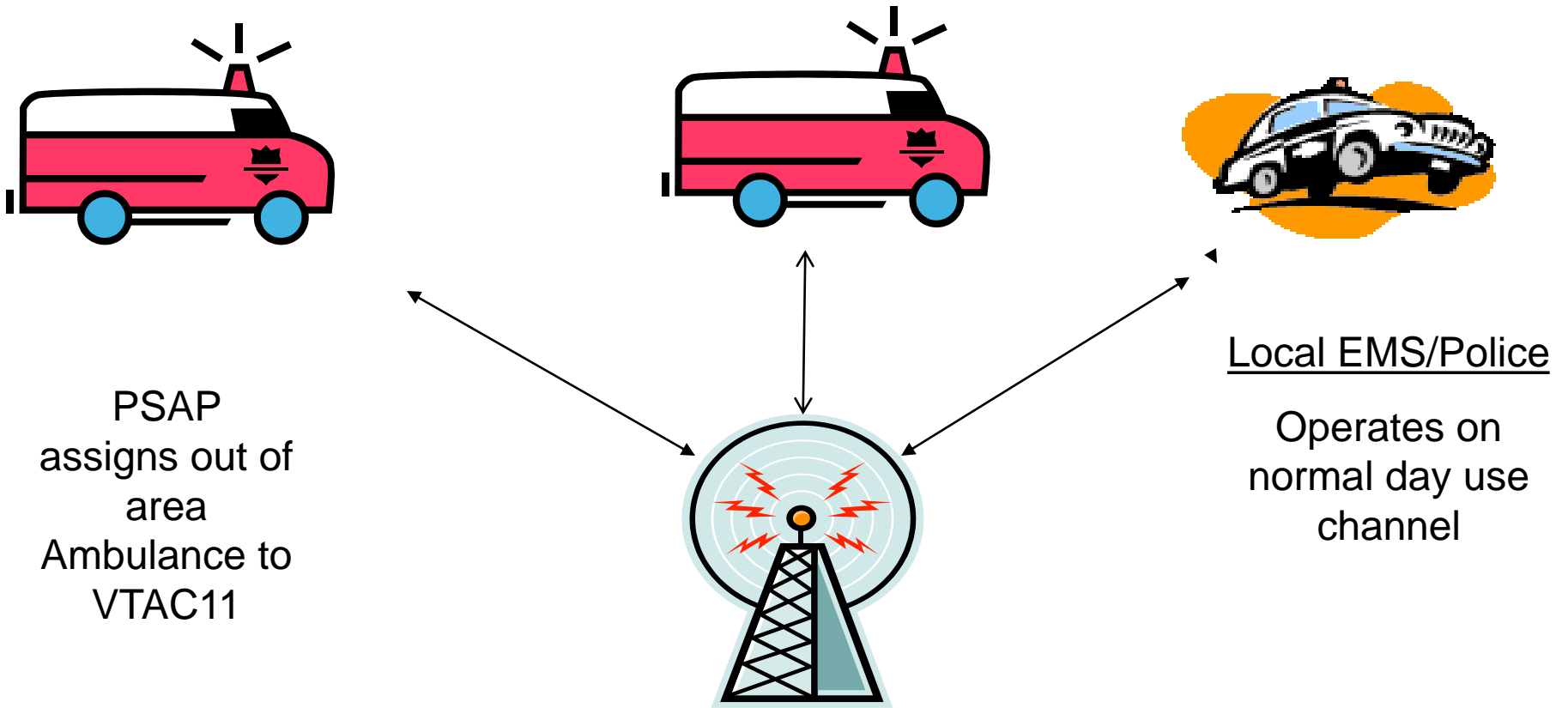
VCALL10

Ambulance places an emergency call out on VCALL 10 (National Interoperable Channel) which will be monitored by PSAP's



PSAP

PSAP (911 Center) will copy the radio transmission and assign a Interoperable Channel, i.e. VTAC11 for them to go to as they dispatch local law enforcement/EMS to their location



PSAP
assigns out of
area
Ambulance to
VTAC11

Local EMS/Police

Operates on
normal day use
channel

PSAP

PSAP makes a patch so that the out of area Ambulance can communicate with local Police/EMS on their own day to day channel or the VTAC11 with the use of the patching capability of Paraclete.

A mutual aid fire response operation is underway at a wildland fire and multiple departments are arriving with different types of communications equipment and frequencies.



EMS group assigned VTAC11



IC will talk to PSAP directly on day to day channel

VTAC 11/12

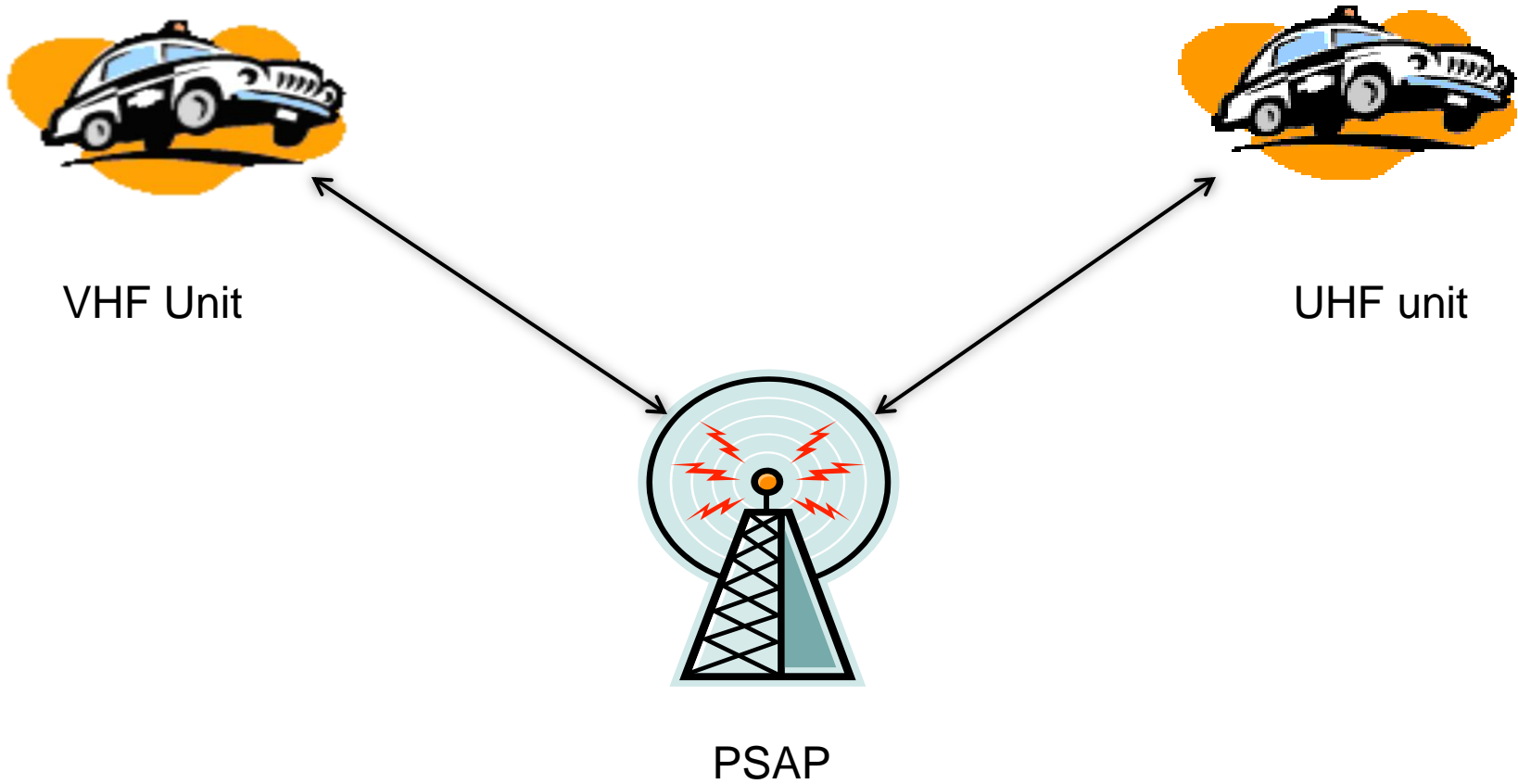
Incident Commander (IC)

All fire units will communicate to IC on VTAC12



Example III

A Law Enforcement Officer (LEO) from another area is traveling across the State with a prisoner when they begin to have a problem with the prisoner and needs some assistance from another LEO. They put out an emergency call on VCALL10 and a dispatch answers the officer and makes a patch to the local UHF system allowing cross band connectivity and interoperability between the two agencies.



Patch is made by a dispatcher at the PSAP and interoperability is achieved.

Paraclete Training

- The Nebraska Emergency Management Agency has taken over training of the system to the locals which has showed much improvement to the use of the system.
 - Continued local buy-in to the system will make it much more palatable for it usage.
 - All stakeholders need to be trained and make a commitment to its usage so it is operable in the event the normal day to day equipment would malfunction.
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Paraclete Training

- 3 Phases
 - Basic Operator / Dispatcher
 - Day to Day users of the system
 - Communications Director / Emergency Manager
 - Individuals who will be establishing plans and maintaining the system at the local level
 - Paraclete Technician
 - Small group of individuals across the state who can work on the hardware and software
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Questions?

