# Digital Data Modes

Steve Aberle

WA7PTM

# Learning Objectives

- How digital data modes fit in emergency/disaster/catastrophe communications

- Why digital data modes are important

- Where jurisdictions need to communicate

- Overview of a digital station and communications needs

# What Are We Talking About?

- People talking to people on the radio
  - Analog Voice
  - Digital Voice
    - Several competing formats
- Computers exchanging data with each other via radio
  - Digital Data
    - Over 100 formats

# Use of Digital Data Modes in Disasters and Catastrophes

- Compliments voice communications

- Capable of transmitting images

- More accurate for lengthy messages

- Can be faster  (given proficient operators)

# Use of Digital Data Modes in Disasters and Catastrophes

- Provides an automatic record of the information exchanged

- Less prone to eavesdropping by news media and the general public during operations

- Interest by Emergency Managers
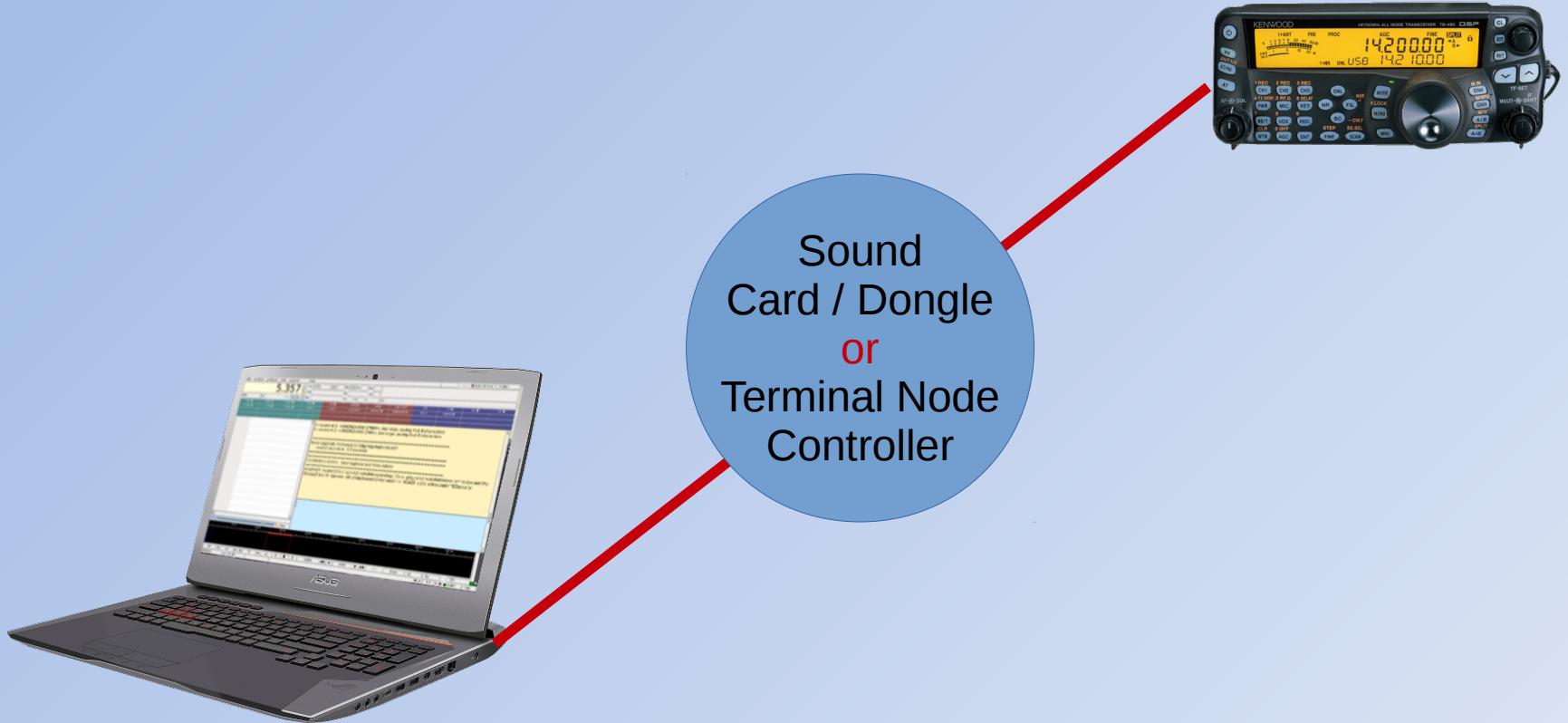
# Where Do Local Jurisdictions Need to Communicate?

- Internally                          {Intra-jurisdiction}
  - Within the community, county, tribe, state

- With their neighbors        {Inter-jurisdiction}
  - Community to community, county to county, tribe to tribe, state to state

- With the next larger jurisdiction
  - Community to county, county to state, tribe/state to FEMA/DHS
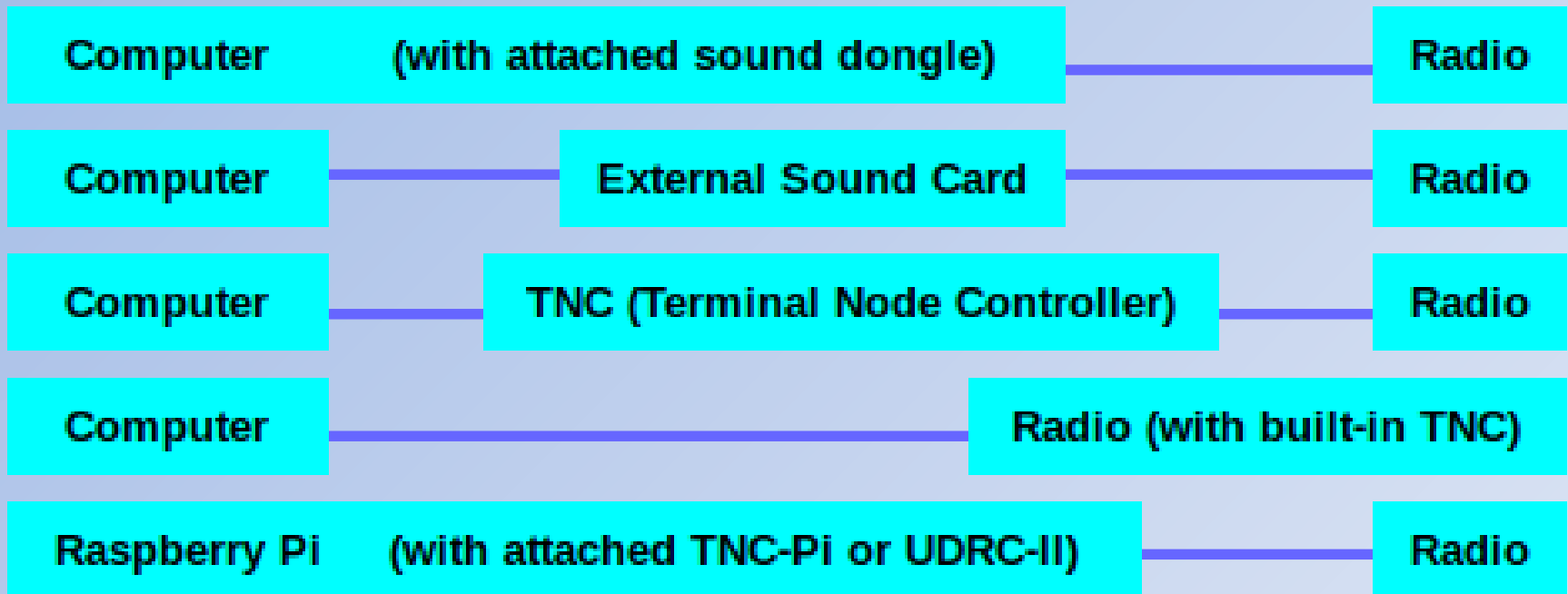
# Digital Mode Hardware

Sound
Card / Dongle
or
Terminal Node
Controller

# Digital Mode Hardware

- You have options!

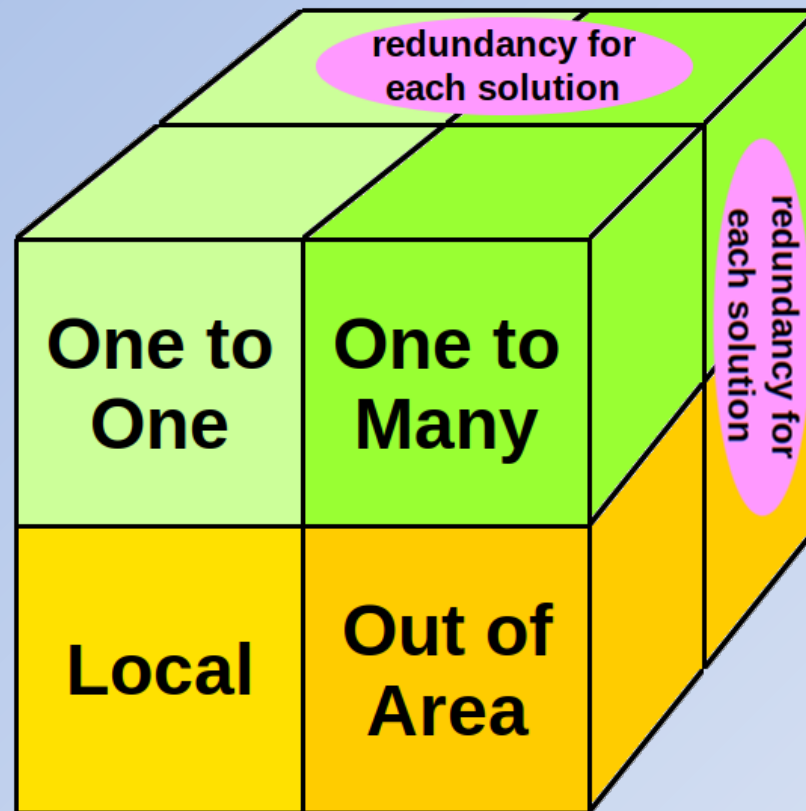| Computer | (with attached sound dongle) | ——— | Radio |
| Computer | — | External Sound Card | — | Radio |
| Computer | — | TNC (Terminal Node Controller) | — | Radio |
| Computer | ———— | Radio (with built-in TNC) |
| Raspberry Pi | (with attached TNC-Pi or UDRC-II) | — | Radio |

# Which Digital Mode Do I Use?

- Whichever ones are required to fulfill the "intra-jurisdiction," "inter-jurisdiction," and "next larger jurisdiction" communications needs of the served agency

- No, there is <u>not</u> a single "best" mode to use
  - And, you need a redundant solution anyway
  - But the most important part is to be compatible with the digital station at the other end

# Communications Needs in Disasters and Catastrophes

# Communications Needs in Disasters and Catastrophes

- Make sure all your (voice and) data planning is complete, and practiced regularly, <u>before</u> the need arises

| | | Primary | | Backup | |
|---|---|---|---|---|---|
| | | One to One | One to Many | One to One | One to Many |
| Local | Voice | √ | √ | √ | √ |
| | Digital Data | √ | √ | √ | √ |
| Regional / National | Voice | √ | √ | √ | √ |
| | Digital Data | √ | √ | √ | √ |

SEA-PAC
2018

SEA PAC

# Questions