Department of
Safety &
Homeland Security

TACN Overview
Highway Safety and Operations

Brief history of TACN

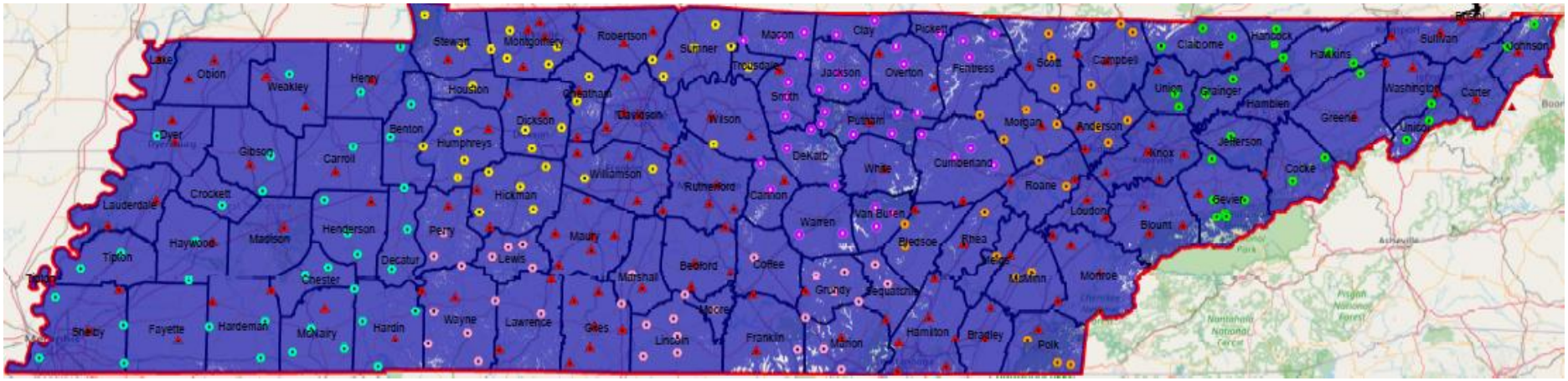
- **2008** - Governor Phil Bredesen commissioned a study of the communications infrastructure for Tennessee's first responders. Goal of Public Safety interoperability
- **2011** - TACN's first implementation phase, TACN 1, began with funding for the Tennessee Highway Patrol (THP) to join the existing systems used by the Tennessee Department of Correction and the Tennessee Valley Regional Communication System.
- **2022** - The second implementation phase, TACN 2 will provide greater statewide coverage including improved coverage on Interstates, major highways, Tennessee State Parks, and County seats
- **2023** – This year the legislature approved the final phase of funding, TACN 3, to meet the statewide coverage goals established by the 2008 study. TACN also has additional funding to improve coverage for:
  - distressed counties
  - facilitate participation for state and local agencies
  - Fund EMS, Emergency Departments and Regional Medical Coordination Centers
  - Waive user fees

Timeline to completion

- Add approximately 200 additional Tower sites to achieve coverage
- Estimate most sites completed in 4 years

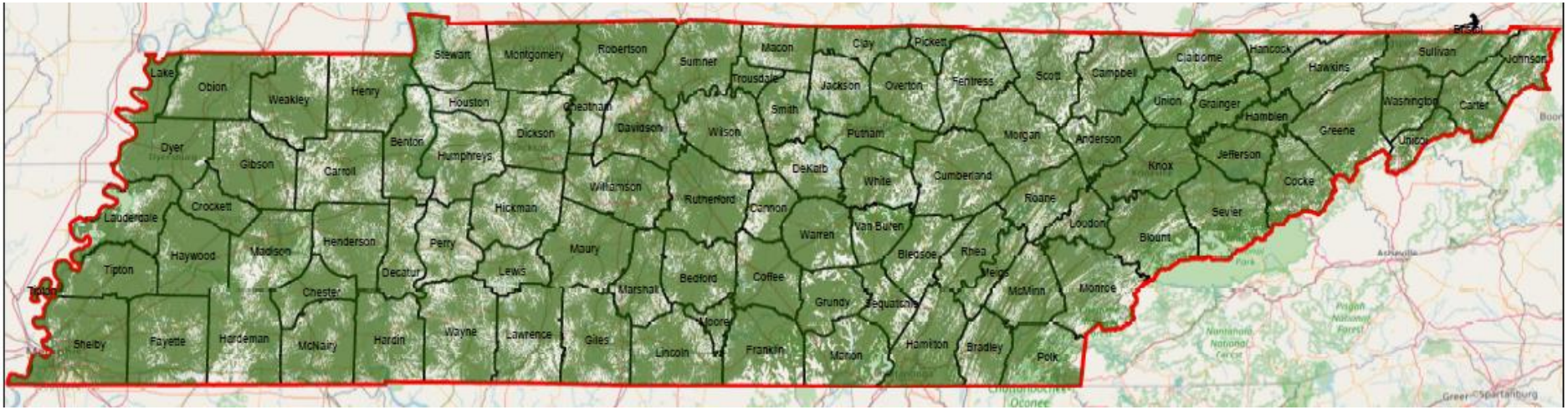
Coverage goals

Mobile radio coverage–proposed~300 sites total

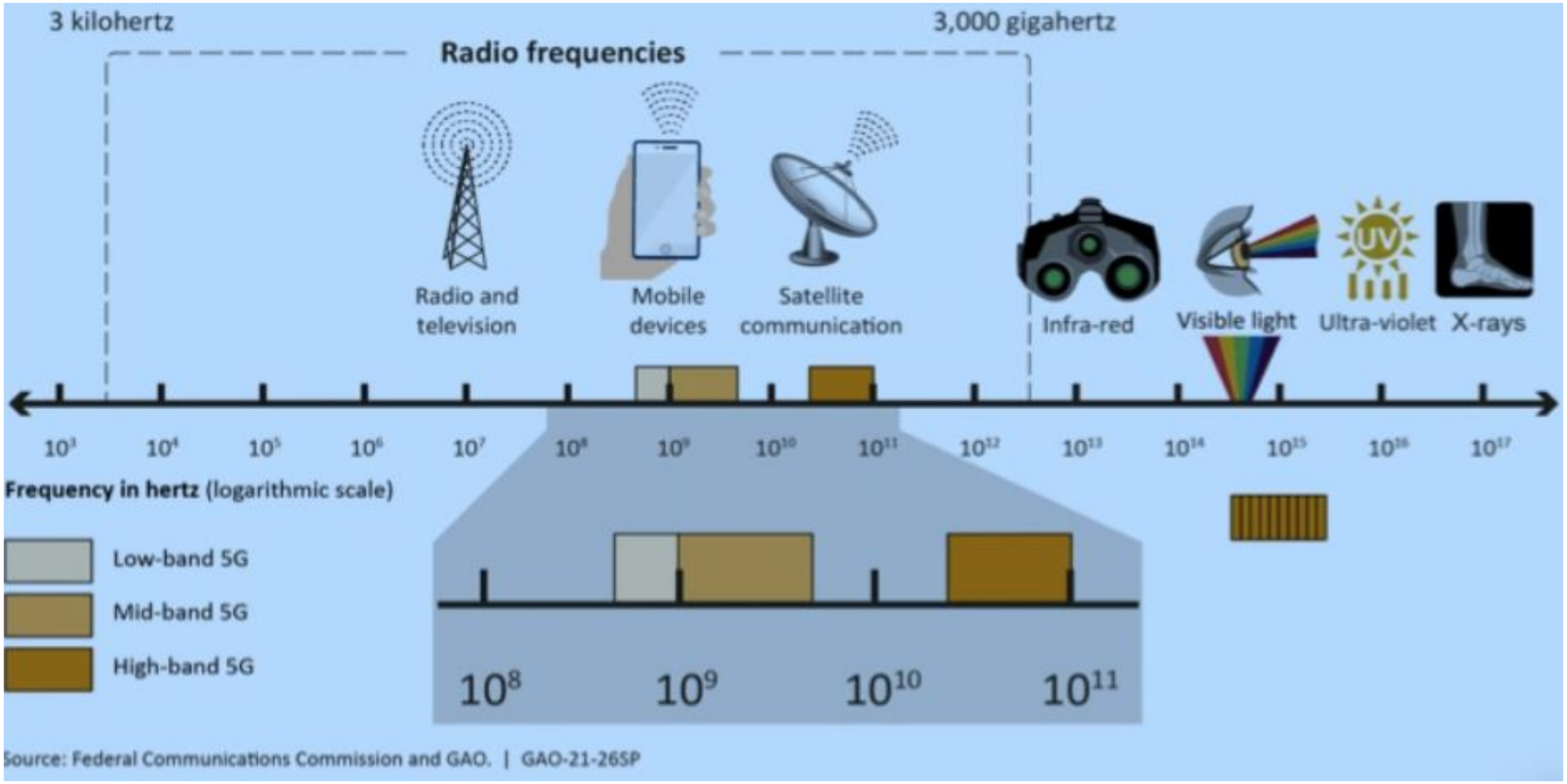


Coverage goals

Portable radio coverage–proposed~300 sites total



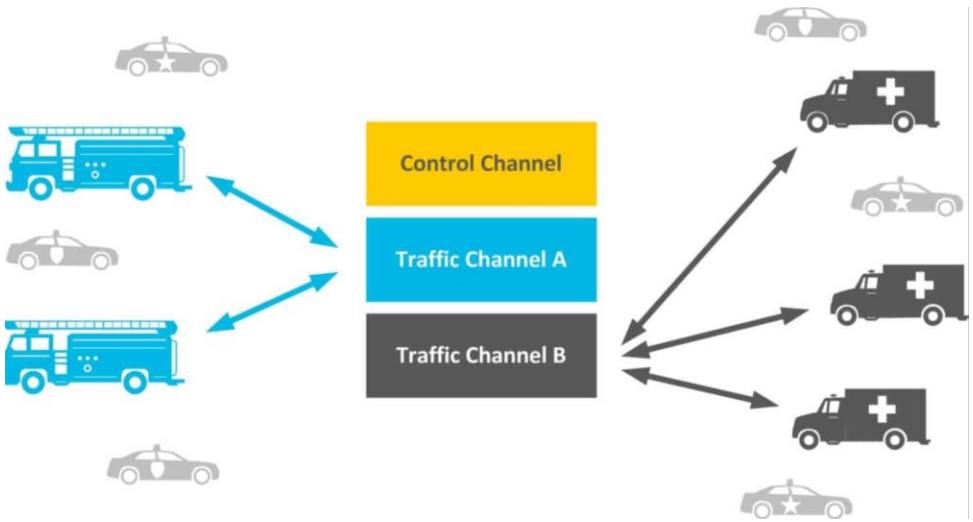
TACN radio spectrum - 700 and 800 MHz digital



Technical talk

Digital trunked radio operates much like cell phone systems

- **Trunked radio** - Multiple frequencies available. Open channels assigned by the radio at the tower site
- **TDMA** (Time Division Multiple Access) – splits the frequency into two channels allowing for two simultaneous conversations
- TACN sites are 6 channel plus – allows for 10 simultaneous conversations



Resilient – built to Public safety standards

- **Towers and shelters** – meet stringent standards – greater than cellular systems (grounding, fuel systems are buried, shelters with stand sever weather and bullet penetration
- **Back up power** – UPS and generator at each site
- **Redundant paths between towers** – microwave, fiber line or cellular
- **Redundant cores** – Each 'core' is redundant and can failover to another core in another city – Nashville, Knoxville, Chattanooga, Jackson (less than 5 seconds)

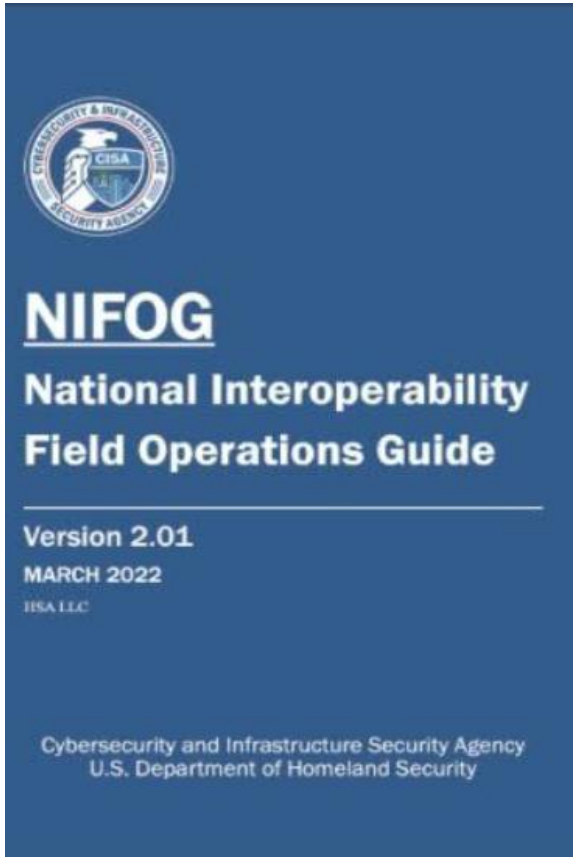
System is monitored 24/7

- Motorola monitors the TACN system from Illinois 24/7 and responds to alarms and forwards alerts to TACN technicians
- Monitored by TACN from 2 locations and remotely

Designed for Interoperability

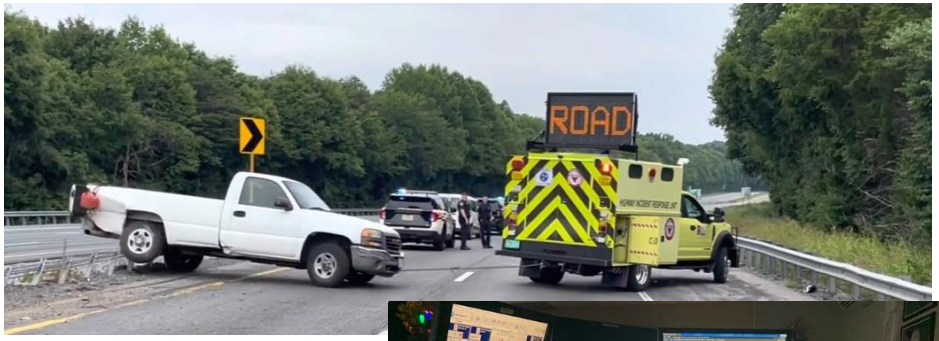
Each agency on the TACN system has standardized lists of National and State shared talk groups that are used for daily operations as well as event/disaster operations

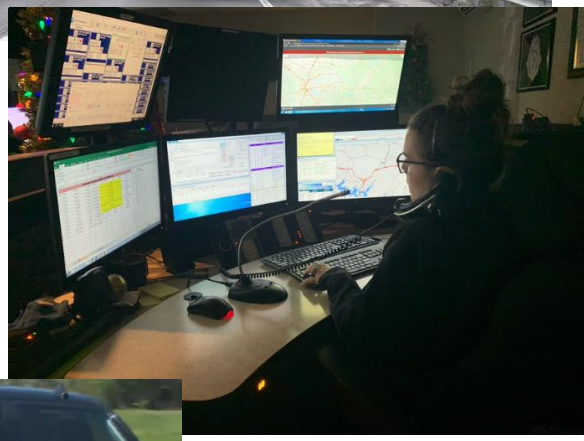
- Law enforcement mutual aid
- Fire mutual aid
- EMS mutual aid
- EMA mutual aid



Importance of Interoperability

- Statewide radio coverage
- Communicate with local responders, dispatchers and State agencies
- THP dispatch monitors 24/7





TACN - Tennessee Advanced Communications Network