



APX™ Two-Way Radios

APX™ 7500 05

DVRS



BERKS COUNTY





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DVRS = DVR connected to APX mobile radio

- Cost effective way of extending radio coverage
- Brings some key P25 system features to the portable



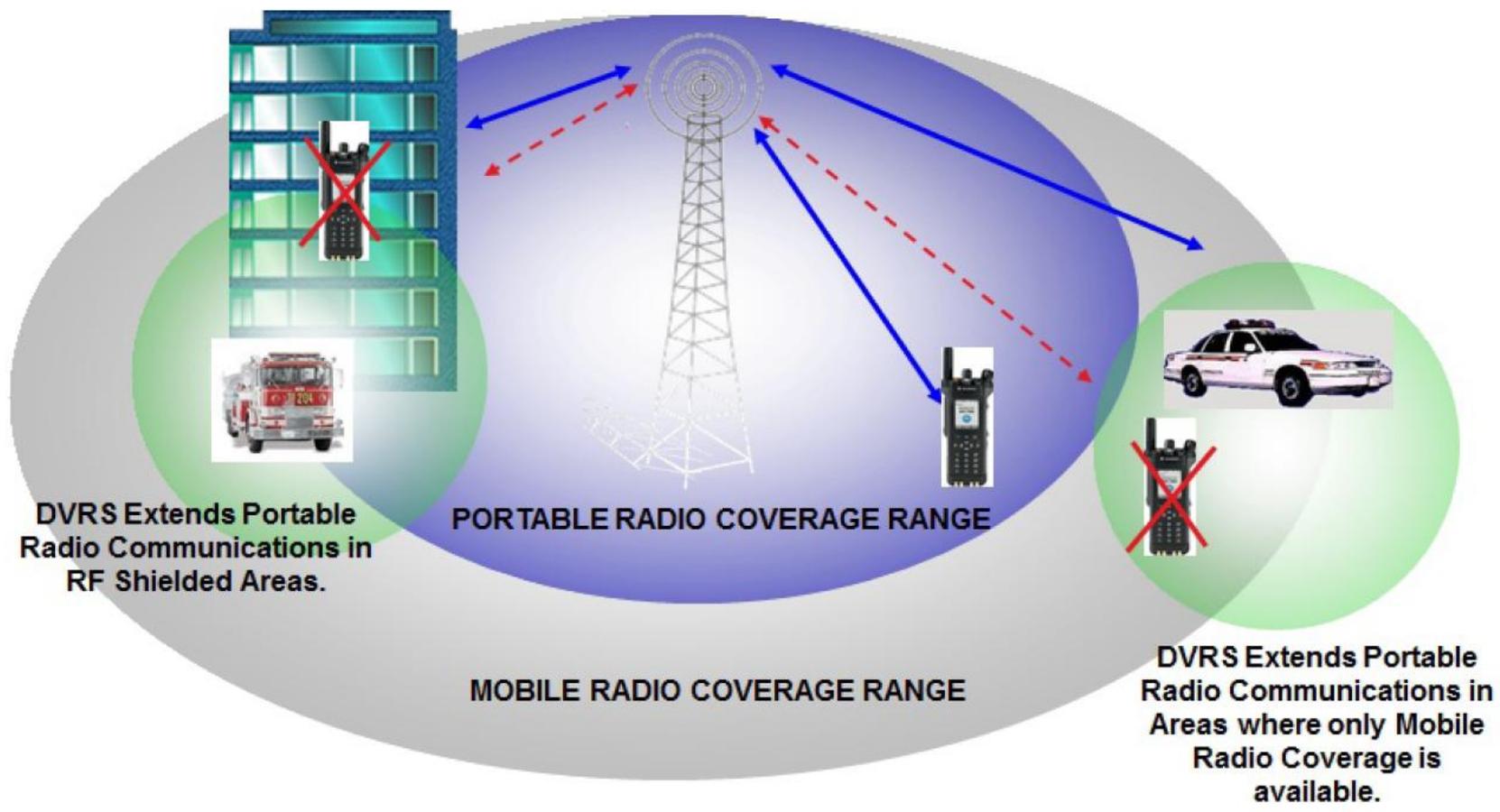
Vehicular DVRS

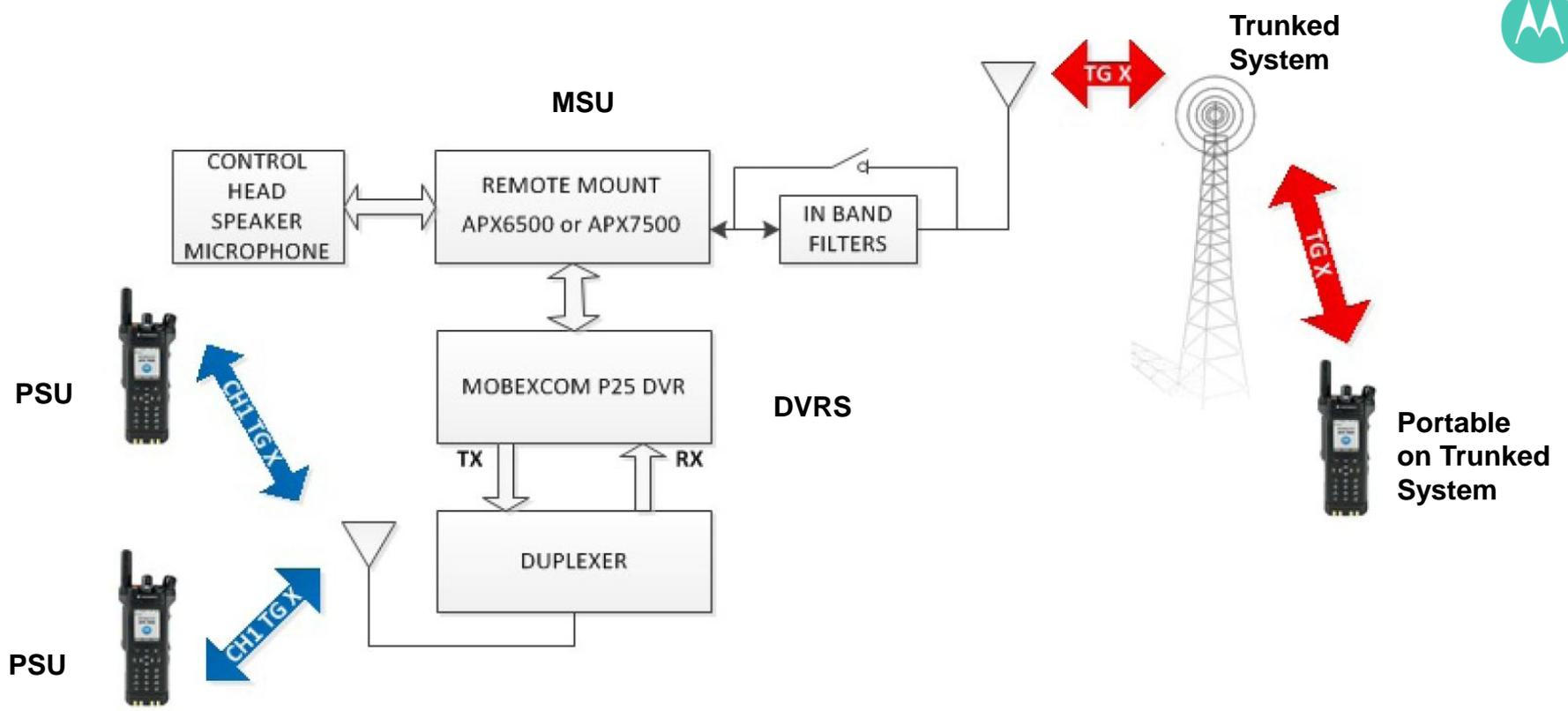


Transportable DVRS



Fixed DVRS





Block Diagram of the DVRS in System Mode

DVRS System Components:

DVRS = Digital Vehicular Repeater System

MSU = Mobile Subscriber Unit

PSU = Portable Subscriber Unit

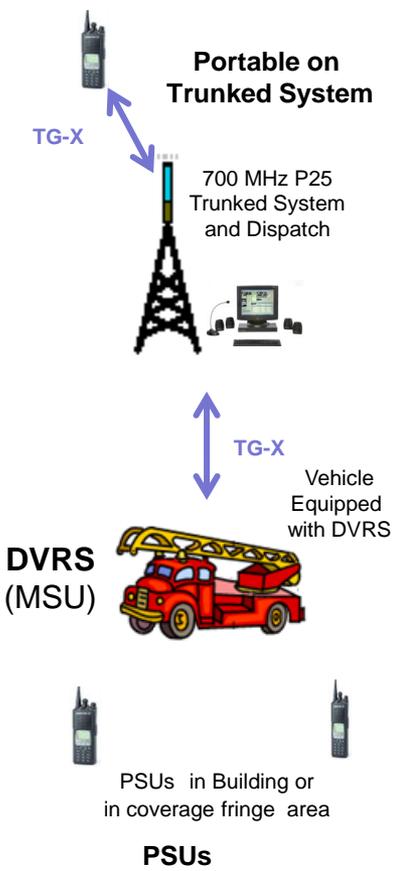


Forced Analog

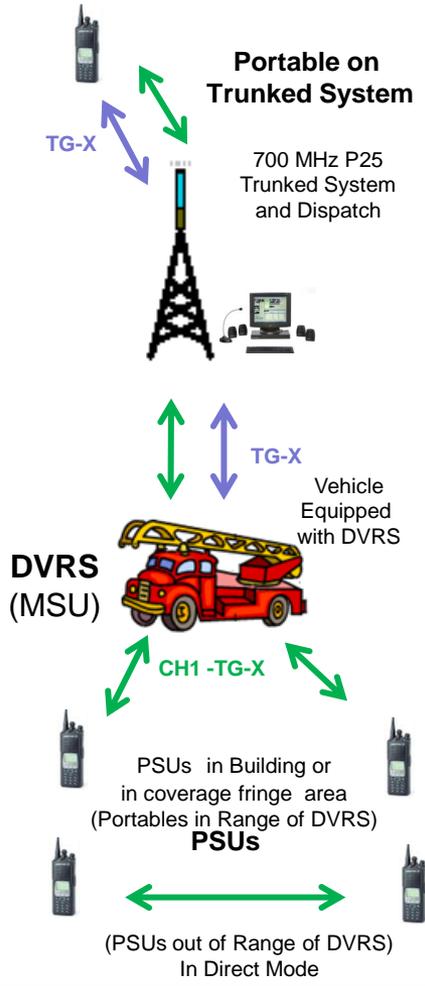
- ❑ **P25 Trunked System is TDMA digital**
- ❑ **Forced analog is a hybrid mode with P25 signaling and analog voice**
- ❑ **Allows for some of the key features such as**
 - **Portable affiliation**
 - **PTT and Emergency ID**
 - **Trunking tones**
 - **Direct Fallback**



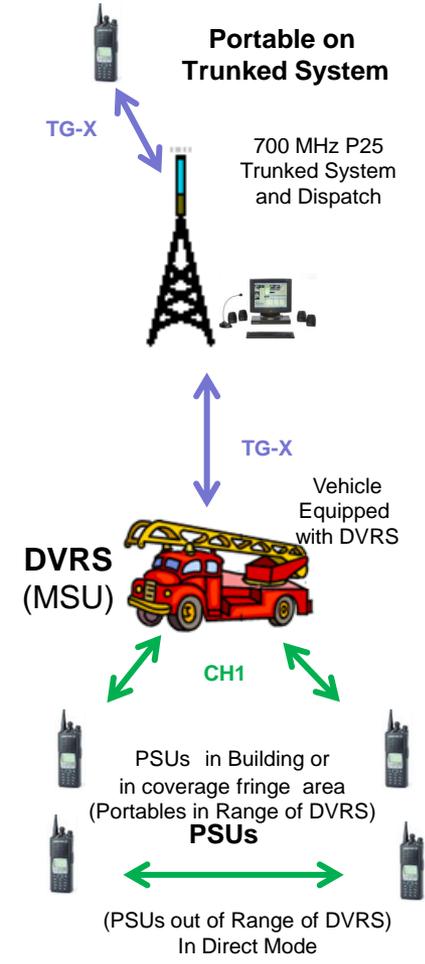
DVRS Off



DVRS System
Berks County P25 System and Dispatch



DVRS Local
Portable to Portable





Feature	DVR OFF Mode	DVRS SYSTEM MODE	DVR LOCAL MODE
PSU Outbound Group Call	No	Yes	No
PSU Inbound Group Call	No	Yes	No
PSU Talk Permit Tones	No	Yes	Yes
PSU Emergency Alarm	Yes (after Activation)	Yes	Yes (No Console)
PSU Emergency Call	Yes (after Activation)	Yes (Group Call)	Yes (No Console)
PSU Emergency ID Pass Through to Console	Yes (after Activation)	Yes	No
PSU PTT ID on Console	No	Yes	No
PSU PTT ID on MSU	No	Yes	Yes
PSU PTT ID on other PSUs	Yes (in Direct mode)	No	No
Failsoft/Out of Range/ Site Trunking on PSU	No	Yes	No
PSU Local Mode Indication	No	No	Yes
DVR Primary/Secondary Voting	No	Yes	Yes
PSU Scan	No	No	No
PSU Direct Mode of operation	Yes (also when out of DVRS Range)	No	No



DVRS Off – Normal Radio Mode



Set the mobile (MSU) to desired trunked Talkgroup.

Use the **4-Way Navigation** button to arrow left until the DVRS Menu button is displayed

Press the **DVRS Menu** button





CHANNEL SELECTION

HOME

MODE

SEL

EXIT

Press **MODE** to change between

- VR System (ON)
- VR Local (Standalone Repeater)
- VR OFF (Deactivate DVRS Function)



Use the **CHANNEL SELECTION** knob to select DVR channel:

- 8MOBRPTR1, 8MOBRPTR2, 8MOBRPTR3,

Press **SEL** for the displayed mode to become active and **EXIT** the menu.



Press **HOME** to go back to the main menu.



- ❑ **DO NOT LEAVE DVRS ON WHEN VEHICLE IS MOVING**
 - Only activate DVRS when parked and ready for use
- ❑ **When activating the DVRS:**
 - In System Mode – Select the appropriate system talk group on the mobile unit before activating
 - In Local Mode – Select ONLY POP25 S8 as the mobile unit talk group before activating
- ❑ **All portables and the DVRS should be set to the same conventional channel. (Zone 800 MOB RPTR / Channel 8MBRPT1 or 8MBRPT2 or 8MBRPT3)**
- ❑ **The portable will provide audible indications to the user when operating through a DVRS:**
 - On the initial connection, in the System Mode ONLY, the portable will beep three times to indicate connection
 - When pressing PTT, a NORMAL “talk permit” tone will be heard when in SYS mode.
 - When pressing PTT, a short ALTERNATE “talk permit” tone will be heard when in LOCAL mode.
 - When a portable goes out of range of the DVRS, a periodic DENY tone will be heard, and when PTT is pressed, a LONG ALTERNATE “talk permit”



❑ Emergency Handling

- In **SYS** mode, **Emergency Alarms** from the portable will be passed to the system and console
 - For any Berks County agency, the ID displayed will be the portable's trunked ID
 - For non-Berks County agencies, the ID displayed will be the portable's ASTRO digital ID
- In **LOCAL** mode, **Emergency Alarms** are not passed to the system and console

❑ Portable IDs when PTTing

- The portable's **ASTRO ID** is seen on the mobile screen
- The portable's console alias is seen at the console

❑ Scanning

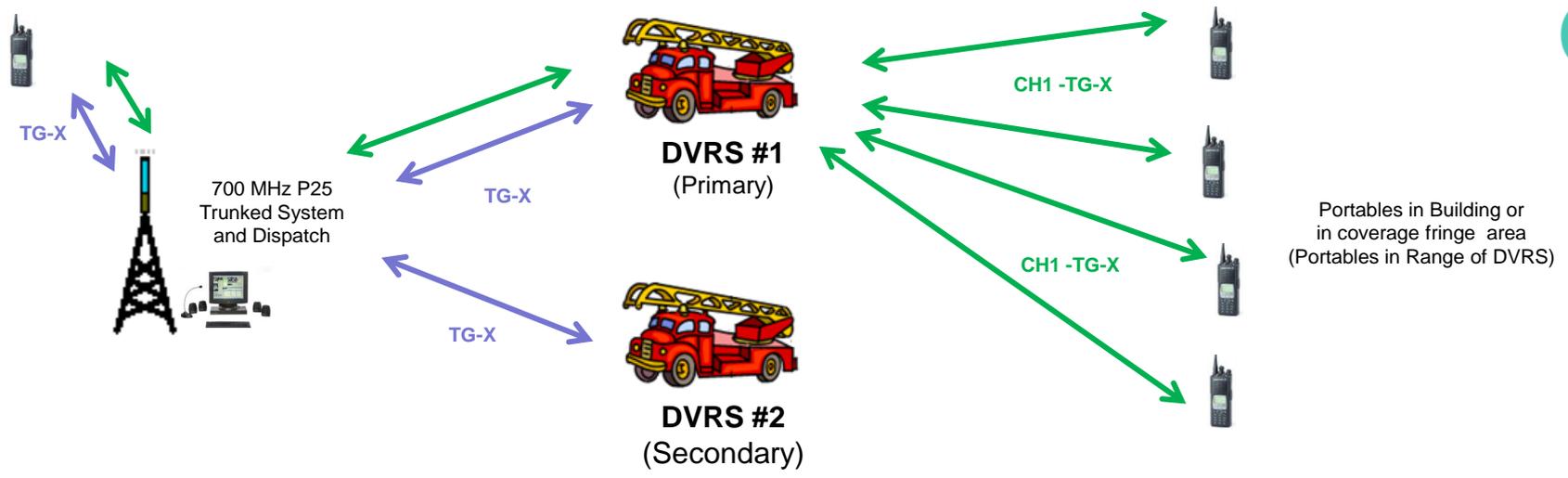
- Is not available on the portable when in DVRS channels

❑ Failure Scenarios

- If the trunked system goes into **Failsoft** or **Site Trunking**, the mobile will operate in these modes
- The **PSUs** on the DVRS system continue working accordingly



Operational Questions and Answers....



- ❑ **Primary / Secondary is an automatic process to make sure only one DVR is active at a scene to prevent interference on the MOBRPTR Channels**
 - The first unit at scene to activate becomes Primary
 - Subsequent DVRSs activated on a scene will become SECONDARY (put in standby)
- ❑ **If a PRIMARY leaves, a remaining repeater (the one with the strongest signal) will become the new PRIMARY**
- ❑ **This ensures that only one repeater is active on any conventional channel at a given time**

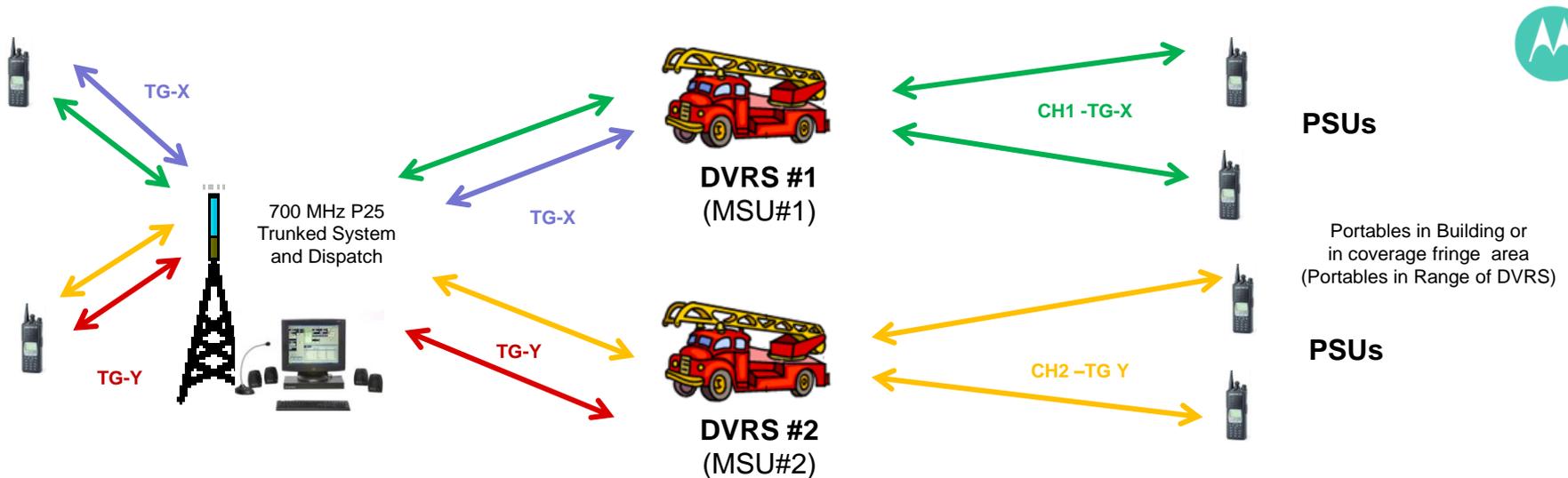


Icon indicates status of DVR

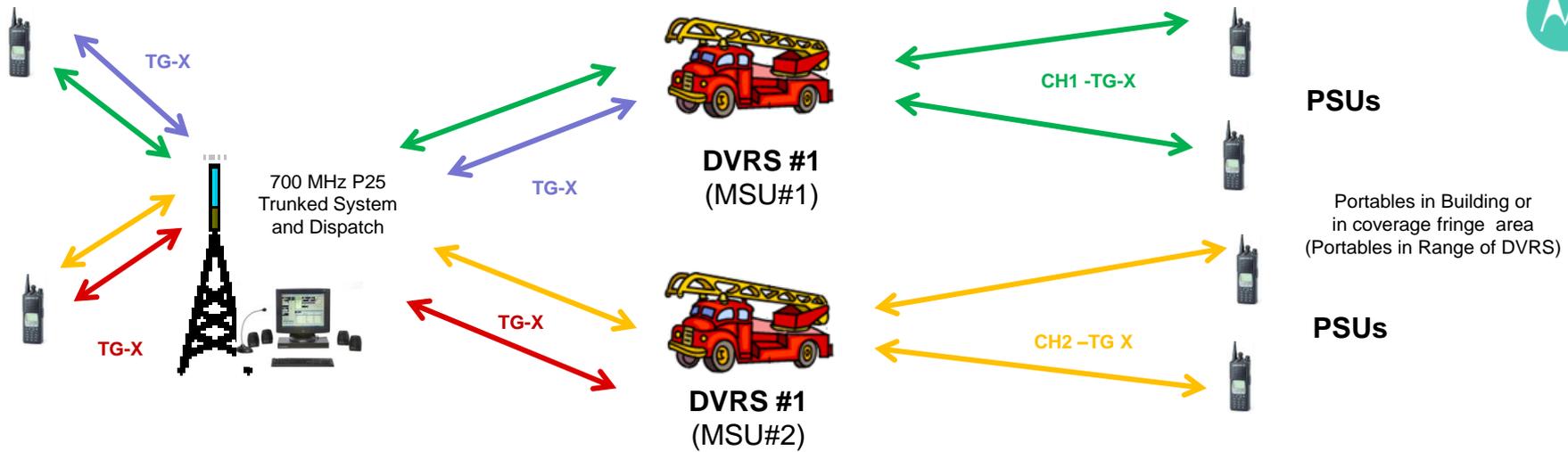
Primary – Solid

Secondary – Flashing





- ❑ DVRS #1 is working on trunked talkgroup TG-X, and DVRS conventional channel CH1
- ❑ DVRS #2 is in the same geographic area is working on trunked talkgroup TG-Y, and DVRS conventional channel CH2
- ❑ PSUs on the DVRS #1 will communicate among each other on DVRS CH1 and with the subscribers and consoles on TG-X. MSU#1 can communicate with the system on TG-X and the PSUs through DVRS #1
- ❑ PSUs on the DVRS #2 will communicate among each other on DVRS CH2 and with the subscribers and consoles on TG-Y. MSU#2 can communicate with the system on TG-Y and the PSUs through DVRS #2
- ❑ Two groups of PSUs and the associated MSUs operate independently of each other



- DVRS #1 is working on trunked talkgroup TG-X, and DVRS conventional channel CH1
- DVRS #2 is in the same geographic area is ALSO working on trunked talkgroup TG-X, but DVRS conventional channel CH2
- PSUs on DVRS #1 will communicate among each other on DVRS CH1 and with the subscribers and consoles on TG-X. MSU #1 can communicate with the system on TG-X and ONLY the PSUs on DVRS CH1
- PSUs on DVRS #2 will communicate among each other on DVRS CH2, and with the subscribers and consoles on TG-X. MSU #2 can communicate with the system on TG-X and ONLY the PSUs on DVRS CH2
- IF a PSU loses communication with its DVRS and goes into direct mode, it will NOT be able to communicate with the PSUs on the OTHER DVRS