

Case Study



Extending Radio Communications for Convoy Applications Out of Network Coverage



Customer Profile

Users

Military

Security Details

Police

Applications

Radio coverage for Military and Public Safety users on the move and out of network coverage.

Convoys on the move require constant communications from the lead vehicle to the last vehicle. Whether it is a military convoy, dangerous goods transport or a police motorcade providing dignitary protection, it is critical that everyone can communicate while on the move.

There are several approaches used to extend portable radio coverage in a convoy application based on the size and complexity of the convoy. For small convoys, direct (simplex) communications can work (Figure 1):



Figure 1 – Simplex Direct Application



As a convoy gets larger and the distance from front to back is too great for simplex operation, the simplest approach is to install a DVRS into the middle of the convoy.



Figure 2 - Small Convoy Using a Single Vehicle Mount DVRS

Once the convoy is too long for a single DVRS repeater, two vehicle mount DVRS, each covering part of the convoy, is a solution. In Figure 3, Group 1 would be placed on DVR Channel A, which would then communicate via the attached mobile on simplex Channel C to the mobile attached to the Channel B DVR in the front part of the convoy. This application is used by many police departments during marathon events when police operations are on the move with the runners. The DVRS are located at the 1/3 and 2/3 points.

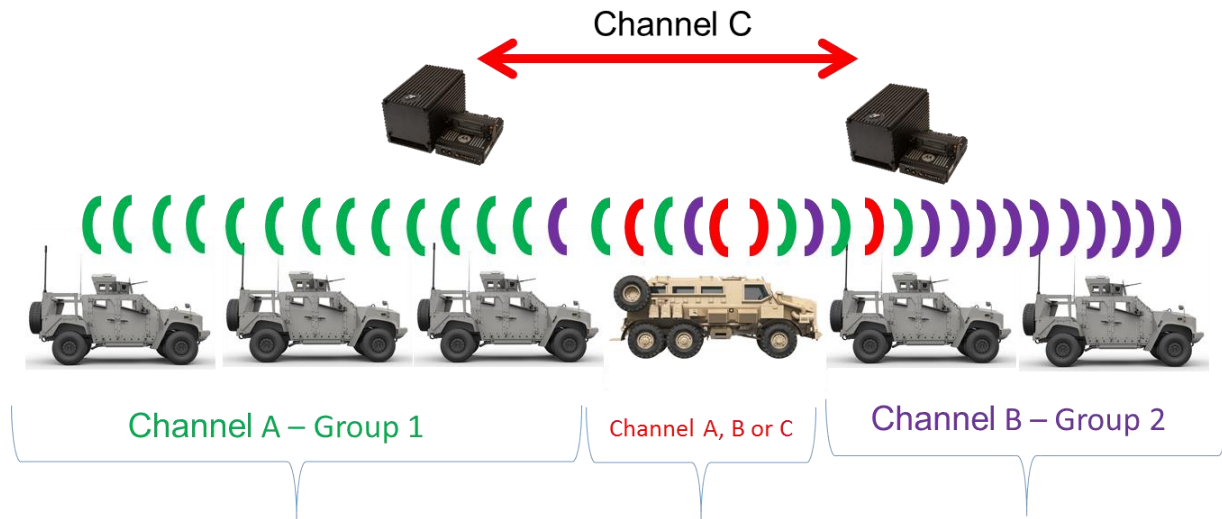


Figure 3 - Large Convoy Using Vehicle Mount DVRS

When convoys are miles apart due to the number of vehicles, a potential solution involves two DVRS with attached mobiles and a third DVRS in the middle of the convoy operating as a standalone repeater. In this case, Channel C is a full duplex channel. Users at the front of the



convoy are again on Channel B, at the back on Channel A and those in the middle on Channel C.

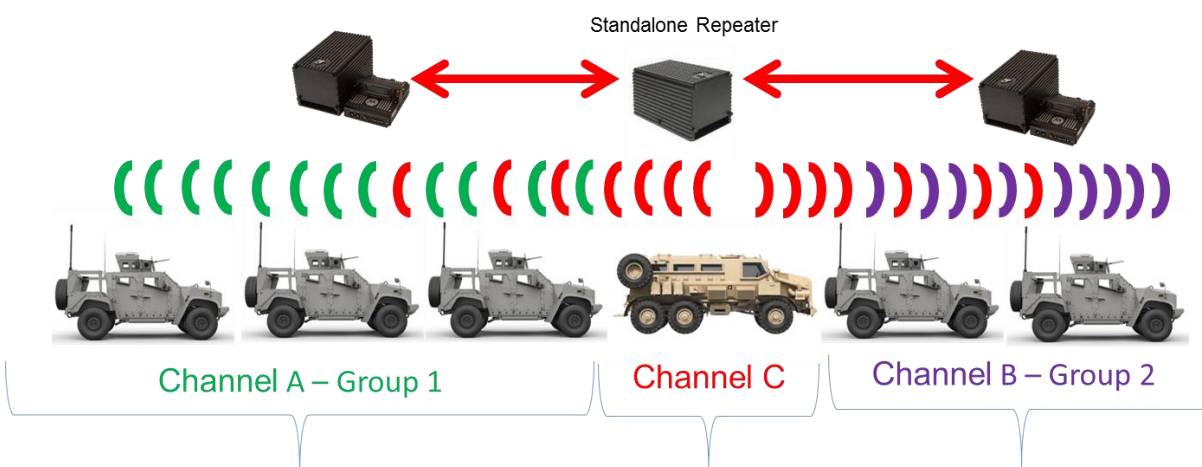


Figure 4 – Extended Convoy Using Vehicle Mount DVRS with Standalone Repeater in the Middle

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