

## **Distribution of Full Motion Video from UAS to Nett Warrior**

**Gino DeBartolo, Jeffrey Powers, Robert Sagona & Roger Burk**

Department of Systems Engineering  
United States Military Academy  
West Point, New York

[gino.debartolo@usma.edu](mailto:gino.debartolo@usma.edu)

*The views expressed herein are those of the author and do not reflect the position of the United States Military Academy, the Department of the Army, or the Department of Defense.*

**Author Note:** The authors would like to thank PM UAS for their support and collaboration throughout this project.

**Abstract:** As the US Army continues the process of implementing Unmanned Aerial Systems (UASs) into platoon movements and missions, there are many factors to consider. One factor is the capability for members of the platoon to receive direct video downlink from the UAS to the End User Device (EUD) of the Nett Warrior intra-mission. The objective of this study and analysis is to determine the optimal architecture of platoon members that should receive the video downlink. The alternatives analyzed include “no downlink to the platoon-level,” “platoon leader/platoon sergeant,” “squad-leader level,” or “team-leader level.” The analysis takes input from various stakeholders, uses models to analyze the costs and weights of the system, and takes an analytic approach to solving the problem through Markov Chains. The recommended solution based on the analysis of the model is that the full-motion video should be implemented to the squad-leader level. This provides the highest benefit to a platoon in respect to the measures of cost, weight and an increase in mission success.

*Keywords:* UAS, Nett Warrior, EUD, Raven