

## **ABSTRACT**

Training soldiers for combat is necessary to mitigate casualties of civilians and soldiers in the field during wartime. An advanced system of training has been developed that prepares soldiers for war by simulating combat scenarios and tracking a soldier's location and if they are shot. The data acquired from these training scenarios has the potential to inform training doctrine and improve combat performance. The use of Geographic Information Systems (GIS) to analyze fatalities in the training exercise has not been implemented to explore ways performance might be improved. This study used data acquired at an Army National Guard Exportable Combat Training Capability (XCTC) training event at Fort Drum in New York on the 7<sup>th</sup> August 2013 to visualize the numbers of unique persons travelling through a cell during the day as well as the average number of people in a grid cell within 30 seconds of an engagement, hot spots of engagements on a linear network, and how the number of people and engagements changed across the field site at 15 minute intervals throughout the day. The output can then be used in the daily After Action Review (AAR) in conjunction with the training playbook and mission objectives to assist soldiers and commanding officers in clarifying what factors are contributing to the hot spots. The results might then be used to require training iterations under specific scenarios to improve training performance.