



SYSTEMS ANALYSIS OF SENSE AND STRIKE CAPABILITIES WITHIN AN ARMORED COMBAT UNIT IN AN OFFENSIVE URBAN OPERATION

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Objective

- Determine various performance parameters of loitering munitions and tactical drones which can significantly impact the operational effectiveness of a combined arms unit within an offensive urban operation.
- Aids future capability development or feasibility study of future sense and strike assets' analysis

Methodology

- Systems engineering and analysis consisting of Agent-based modelling and statistical analysis

Modelling and Simulation Design

- Company-level Armored Combat Team (*BLUE Force*) against Platoon (+) Armored Combat Team (*RED Force*)
- BLUE Force support assets designed in three variations:
 - Attached with RQ-11A RAVEN UAV and M109A6 Paladin Howitzers
 - Attached only with RQ-11A RAVEN UAV, without M109A6 Paladin Howitzers
 - RQ-11A RAVEN UAV and M109A6 Paladin Howitzers replaced with Tactical Drones and Loitering Munitions

Operational Insights

- Higher effectiveness when sense and strike assets are deployed in unison
- Trade-off between assets' force structure and specifications of assets
 - Less capable assets require larger force structure to achieve same outcome

Follow-Up Research

- Command and Control (C2) feasibility study of unmanned systems
- Ideal task organisation and hierarchical C2 of deployed unmanned systems

