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Title of Paper:

"Apply Surgical Techniques To Enhance The Capabilities Of The Advanced Fighter Jet In The Battlefield "

Topics:

(1) Track 1: C2 Concepts, Theory, and policy
(2) Track 3: Modeling and Simulation
(3) Track 8: C2 Technologies and Systems

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ABSTRACT:

The objective of this paper is to explore the means to eliminate the enemy and minimize "friendly" casualties in the future battlefield. Initially, there must be accurate detection, tracking, and classification of the enemy target. This relationship is analogous to that of a surgeon excising a tumor and leaving the healthy surrounding tissue intact. The surgeon must likewise through a battery of tests determine the size, shape, location, and composition of the tumor prior to its excision since removing too much or too little could be detrimental to the patient. The surgical strike becomes more complicated when it changes from a static to dynamic, such as a moving target or metastatic carcinoma.

The author provide mathematical models to handle two different of targets; the fixed target and the moving target. For moving target, we apply the Extended Kalman Tracker to track it until it is "lock on" and then annihilated. For multiple targets, the Dempster-Schafer's Sensor fusion model will be used to prioritize targets to determine order of attacked . This new information technology will provide agility to the warfighter and impact the command and control in the 21st century.