

**12th ICCRTS**

**“Adapting C2 to the 21st Century”**

**Title of Paper:**

**Measuring the Effects of Cumulative Influence:  
Using NCW to Prevent or Minimize Civilian Casualties**

**Topics**

**C2 Metrics and Assessment; C2 Concepts, Theory, and Policy;  
Cognitive and Social Issues**

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# Measuring Influence

# Agenda

- Introduction and Examples of Military Usage of Influence
- Definitions
- Scenario
- Metrics
- Conclusions

# **“The skillful leader subdues the enemy’s troops without any fighting”.**

## **Sun Tzu – The Art of War**

- These words written by Sun Tzu several millennia before us, show that the warfighter has always sought to influence the enemy and the enemy’s allies to achieve victory in the least costly manner.
- The use of influence as a strategic tool to improve one’s position against a superior adversary has been clearly demonstrated as an important tool in determining the outcome of modern armed conflict. In the case of Viet Nam, influence was used as a tool to assist a relatively small military force (North Viet Nam) in overcoming a significant military disadvantage against superior American forces.
- General Giap used influence as a key process tool in his removal of American occupiers from Indo-China. Giap successfully orchestrated world public opinion and U.S. public opinion to remove American forces from Viet Nam.

# Introduction Continued

- **Also, by targeting the U.S. with a successful influence campaign, Congress was persuaded to defund the South Vietnamese Army, granting Giap the final victory.**
- **These achievements by General Giap, accomplished in part by his use of a strategic framework of cumulative influence, required a multi-faceted approach to influence management through the application of simple and clear processes.**
- **The process was to clearly state your strategic goals, create a plan, adapt the plan constantly and smartly, combine armed and unarmed influence, design and implement tactical level influence campaigns in the form of influence packages (authors term) with specific goals whose effects will cumulatively sum towards the strategic goal of the removal of US forces from Viet Nam. In a sense, General Giap should be considered the father of modern successful influence package based warfare, although much of his planning was based upon Maoist theory.**

# More Recent Examples

- More recently, Hezbollah successfully used influence to arouse world opinion against Israel for causing civilian casualties. World opinion was thus used to impose restrictions on the Israeli Army which clearly aided in Hezbollah's survival and in effect achieved a Maoist strategic stalemate against the Israeli military.

# Definitions - Influence

- **Influence** is a term that refers to the ability to indirectly control or affect the actions of other people or things. The meaning of influence therefore depends on who or what is being affected, and to what end?
- The Navy's Strategic Studies Group has defined Influence as "the power of producing effects without obvious exertion of force or direct exercise of command."
- Influence is created and achieved through propaganda, information operations, ideology, and memetic manipulation. Influence has an aspect which is translated into a pressure towards dynamic tipping point(s) which produce a behavior(s). Influence can also be considered as a form of social network reinforcement (positive and negative).

# Definitions Continued

- **Information operations:** "The integrated employment of the core capabilities of electronic warfare [EW], computer network operations [CNO], psychological operations [PSYOP], military deception, and operations security [OPSEC], with specified supporting and related capabilities to influence, disrupt, corrupt, or usurp adversarial human and automated decision making while protecting our own.
- **Cumulative Influence** – the total synergistic effect of multiple concurrent influence operations or the aggregate effect of a long series of timed or orchestrated influence operations
- **Influence Package** - An influence package is a set of information operations and tools which are designed to be executed as a military campaign to effect a change in a given number of people's behaviors, beliefs, attitudes, voting patterns, buying patterns such that a shift in behavior patterns occurs in the target audience to the benefit of the initiator of the influence campaign.

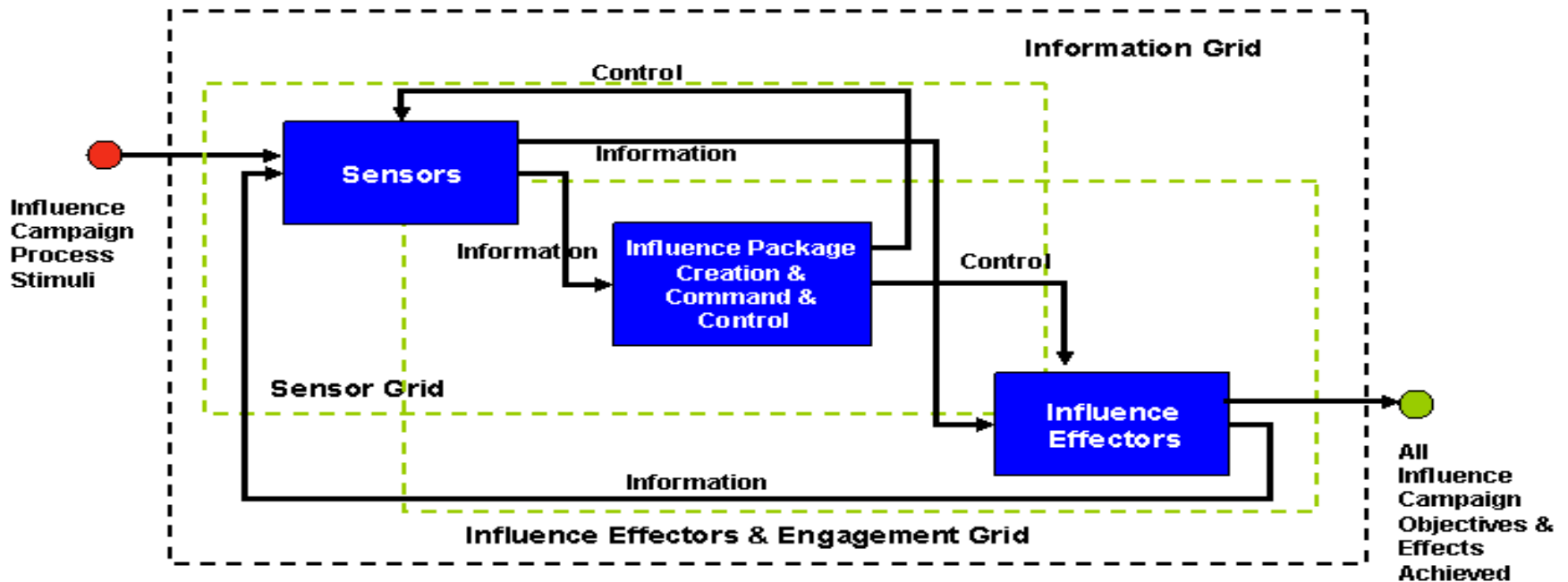


# Definitions Continued

- **Influence Metrics** are parameters used to measure the success or failure of a particular influence campaign. Strategic examples would include the prevention of a war; or the conclusion of hostilities to ones favor while minimizing our own casualties and expense; minimization of overall casualties; the minimization civilian casualties in a given engagement, etc.; Tactical metrics would include increasing the percentage of a population in support of a war; decreasing the percentage of a population in favor of a war, lost profit amounts by corporations due to lost sales due to an influence campaign targeting the foreign buyers of the adversary's goods; influence that decreases the amount of money allocated to a war; influence that increases the number of senators or congressmen who will vote in favor of withdrawal from a conflict, etc.
- **Influence Network** - A specialization of Bayesian nets which have been used in determining adversary's pressure points and actions that may lead to desired effects. Usually each node in the network is defined probabilistically such that the effects of crossing an activation threshold will influence nodes downstream on the network from the current node, where multiple nodes may singularly or cumulatively influence one or more downstream nodes probabilistically. Timed influence networks assume that the influence opportunity is finite and therefore must occur within a specified time frame after the original node's activation threshold is crossed.

# Command & Control of Influence Operations

## Command and Control of an Influence Package



# Scenario

- Blue wishes to destroy recently placed red rocket launchers and anti-aircraft defense batteries located in a heavily populated red city
- Blue wishes not to cause civilian casualties

# The influence package & campaign processes

- **Identify the strategic and tactical goals and target of the influence campaign. Primarily, blue wishes to remove the military threat while causing minimum red civilian and tourist casualties.**
- **Tactically, Blue wishes to encourage civilians in the targeted areas to leave the city by a particular time and date.**
- **Calculate the number of total persons to be influenced to leave the city.**
- **Determine the acceptable number of red civilian casualties. Subtract this from the number of tourists and red civilians; this becomes the minimum acceptable refugees from the targeted city.**
- **Identify the most probable effective influence means by determining the available red “influence-able” assets which can be targeted.. How many computers, how many web site visits, how many TV channels, how many text capable cell phones, the number of email accounts, fax machines in hotels, drop areas for RFID tagged leaflets, etc.**

# The influence Package & Campaign Processes - continued

- **Compose a simple and easy to understand evacuation request message for the emails, text messages, web sites, and leaflets.**
- **Design an automated workflow process which will synchronize the web and email influence efforts.**
- **Design the process instrumentation and metrics capture strategy which will permit the following metrics to be captured:**
  - **Total number of people who have left the city – (data captured by drones and other sensors)**
  - **Total number of emails sent**
  - **Total number of emails responded to**
  - **Total number of cell phone text messages transmitted**
  - **Total number of cell phone text messages replied to**
  - **Build a location map of the city's drop zones for the leaflets with RFID tags**
  - **Monitor the actual drop locations of the paper leaflets such that a map of the RFID tags is created.**
  - **Count the number of times the RFID tags move**
  - **Count the number of RFID tags that are destroyed (stopped transmitting – another predictive variable)**
- **Instrument the process and Launch the influence operation, RFID sensors, and population movement drones. (Activate and deploy the influence package)**

# The influence Package & Campaign Processes - continued

- **Blue defines a campaign of multiple modes of information assault combined with persistent drone coverage to take videos of the fleeing population should they decide to vacate the target areas. The chosen strategic goal of the campaign is to guarantee that 80% of the civilian population has vacated the target areas prior to the start of bombing.**
- **The influence package will execute as follows. First, on day 1, a series of emails are transmitted to all known email accounts with the message warning the civilians of an impending ruthless attack. Concurrently, leaflet warning messages are prepared with embedded RFID tags. The paper messages are to be dropped by aircraft over the target areas of the red city. Persistent overhead sensors will begin to monitor the RFID tag locations after they have been dropped to validate the paper messages have reached the intended drop zones. If the RFID's all appear to be in one big pile then the enemy has picked up the paper messages and placed them away from their target audience or red may be conducting some sort of counter information activity of their own. At this time the video capable drones and RFID sensor aircraft are deployed in a persistent pattern close enough to the red city to detect meaningful metrics. The video and RFID data is then transmitted back to blue influence campaign headquarters**

# The influence Package & Campaign Processes - continued

- **On day 2, the campaign continues with the additional sequenced activities of web log entries into popular red web logs, and the transmission of the warning message as cell phone text messages to known cell phone users. The video drone now is beginning to relay the images back to influence campaign headquarters and feed it into pattern recognition software such that an actual refugee count can begin. This will be the primary metric of success since blue has calculated the preferred number of refugees it wishes to see prior to beginning the assault of red's rocket launchers. The RFID sensor is reporting that 88% of the tagged paper messages fell into the desired reader zone correctly but several hours later 75% of all tags stopped transmitting, indicating that red had indeed discovered and destroyed most of the paper messages. To counter this, blue begins an aggressive web page overwrite activity which installs the warning message as a banner onto popular red websites. Refugees now begin to appear at the exits of the red city**

# **The influence Package & Campaign Processes - continued**

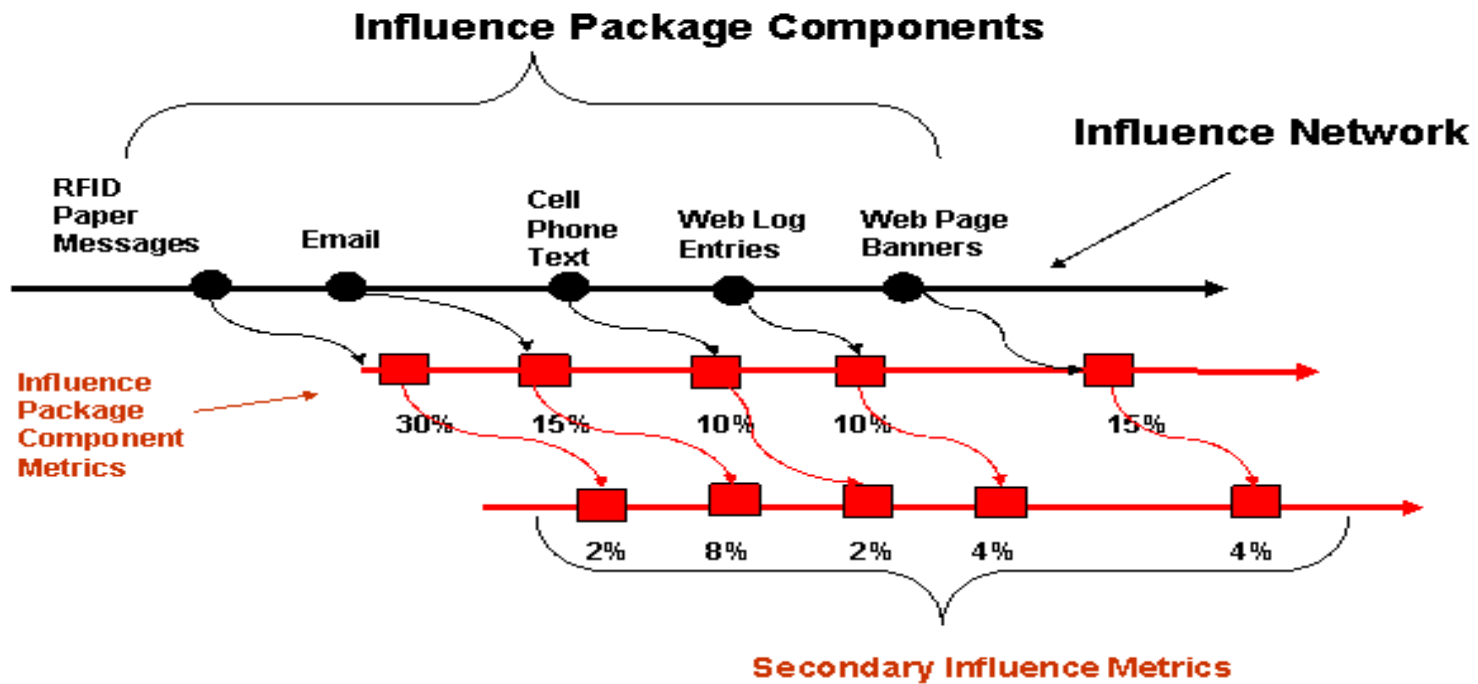
- **On day 3, the video sensors and a local blue friendly news organization concur that the refugee exodus is increasing dramatically.**
- **On day 4 the desired number of refugees have indeed left the city. Blue air drops food and medicine to the red refugees to attempt physical influence to lessen the damage done to their reputation by the attack and also drops a second set of leaflets on the fleeing refugees promising resettlement and financial reconstruction aide and after the destruction of the rocket launchers.**
- **On day 5, blue attacks and successfully destroys the rocket launchers with no civilian casualties. On the following days, humanitarian food and medical assistance begins to arrive along with reconstruction aid. This concludes a very successful influence campaign.**
- **But what was the influence package comprised of? Red email address determination capability, RFID tagged leaflets, RFID sensors, RFID dispersal pattern recognition software, capable sensors, video capable drones, web page overwrite capability, cell phone number detection capability, large scale cell phone text message broadcast capability, food and medical assistance, and reconstruction financing to both rebuild and provide work for the returning red refugees to reduce their likelihood of joining the red forces, etc.**



# Metrics

- Now let's look at the metrics, we know that these metrics are valid in our imaginary scenario because blue friendly media television reporters have interviewed many of the fleeing refugees. When a refugee was asked by the reporter why are you fleeing? They would usually respond about an email, text message, leaflet, etc. The cumulative methodology worked as follows:
  - Emails convinced 15% of red's civilians to vacate
  - Cell text messages convinced 10% of red's civilians to leave
  - Web page banners convinced 15% of red's civilians to leave
  - The RFID tagged leaflets convinced 30% of red's civilians to leave
  - Web log entries convinced 10% of red's civilians to leave
  - Red's informed civilians convinced the remaining 20% to leave (a secondary influence, the influenced themselves influencing others)

# Metrics Continued



# Summary

- **Sun Tzu suggested that influencing an enemy to surrender without taking casualties is the greatest of all possible victories.**
- **General Giap effectively implemented influence processes during the Viet Nam war.**
- **We have defined influence for this paper as the ability to achieve effects without the use of kinetics.**
- **We have defined metrics as context specific measures which can be used to determine the success or failure of an influence process or package.**
- **The metrics should provide an easy to understand methodology for dynamically assessing if the influence package needs adjustment.**
- **Our hypothetical scenario suggests that simple countable metrics can be used to monitor the effectiveness of the influence package.**
- **The influence campaign planners and package creators were able to determine the number of civilians who must leave, devise a multi-faceted approach to deliver their messages to other red civilians and then monitor the success by counting the number of refugees and conducting simple interviews as to why the refugees decided to leave.**
- **The scenario and the results capture permitted the influence package creators to establish linkages between different types of influence tools, and their relative cumulative effects for later use as effects based influence mission planning aids.**