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ABSTRACT KITAE II: KNOWLEDGE DEVELPMENT IN BATTLESPACE HELMAND

This paper is the second in the Kitae series and focuses specifically on the sense-making challenges that derive from a complex battlespace for knowledge development. The theoretical approach includes constructivist and material/efficiency approaches to understanding the challenges of the complex battlespace to military intelligence. These challenges to the traditional intelligence cycle are placed within a comparative framework of traditional time & space (TTS) approaches vs. a social network approaches (SNA) based on a 'system of systems' understanding. A case study consists of participant observation data from a 6 month period in Upper Gereshk Valley (UGV), Helmand, Afghanistan. The objective was to identify the approaches that work best in a complex battlespace, where there are a plethora of actors and interests. The results clearly indicate that SNA is not only essential to understanding the counter insurgency (COIN) environment for effective warfighting, but just as important to understanding our own MI organization.

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In memory of those who died

shaping the battlespace during the period referred to in this study.

Sapper Mark Antony Smith 26-07-2010
Lance Sergent Dale Alanzo McCallum 01-08-2010
Marine Adam Brown 01-08-2010
Lance Corparal Erik Berre Rolandsen 07-08-2010
Corporal Jimmi Bøgebjerg Peteresen 07-08-2010
Lieutenant John Charles Sanderson 11-08-2010
Rifleman Remand Kulung 12-08-2010
Sapper Darren Foster 13-08-2010
Sapper Ishwor Gurung 13-08-2010
Lance Corporal Jordan Dean Bancroft 21-08-2010
Lance Corporal Joseph McFarlane Pool 05-09- 2010
Captain Andrew Griffiths 05-09-2010
Kingsman Darren Deady 10-09-2010
Trooper Andrew Martin Haworth 18-09-2010
Sergeant Andrew James Jones 18-09-2010
Private Simon Mundt Jørgensen 22-09-2010
Corporal Matthew Thomas 25-09-2010
Rifleman Suraj Gurung 02-10-2010
Sergeant Peter Anthony Rayner 08-10-2010
Corporal David Barnsdale 19-10-2010
Private Mikkel Jørgensen 23-10-2010
Sapper William Bernard Blanchard 30-10-2010
Senior Aircraftman Scott Hughes 07-11-2010
Ranger Aaron McCormick 14-11-2010
Lance Corporal Jørgen Randrup 14-11-2010
Guardsman Christopher Davies 17-11-2010
Private John Howard 05-12-2010
Corporal Steven Thomas Dunn 21-12-2010
Warrant Officer Henry Wood 28-12-2010
Private Joseva Saqansgonedau Vatubua 01-01-2011
Private Samuel Enig 09-01-2011

… and the more than 50 Afghan partners killed as well as the many CF/ANSF multiple amputees

List of Acronyms	
AFG	Afghanistan
ANSF	Afghan National Security Forces
AO	Area of Operations
BG	Battle Group
CIED	Counter Improvised Explosive Device
COIN	Counter Insurgency
CF	Coalition Forces
C2	Command & Control
DABG	Danish Battle Group
EBAO	Effects Based Approach to Operations
EBO	Effects Based Operations
FoM	Freedom of Movement
GDP	Ground Dominance Patrol
GIRoA	Government of the Islamic Republic of Afghanistan
GSM	Global System for Mobile Communication
HTM	Human Terrain Mapping
ICP	Intelligence Collection Plan
IED	Improvised explosive Device
INS	Insurgents
IPB	Intelligence Preparation of the Battlefield
ISTAR	Intelligence, Surveillance, Target Acquisition, Reconnaissance
LN	Local Nationals
ORBATs	Order of Battle
MoE	Measurements of Effectiveness
PB	Patrol Base
PIR	Priority Information Request
QEQ	Quantity Effects Quotient
RCT	Rational Choice Theory
SAQ	Structural Agility Quotient
SF	Special Forces
SME	Subject Matter Expert
SOF	Special Operations Forces
TIC	Troops in Contact
TiGR	Tactical Ground Reporting Tool
TFH	Task Force Helmand
TTP	Training, Tactics, and Procedures
UGV	Upper Gereshk Valley

Expanding time and space into a broader discourse,

deepens understanding and is a better basis for action.[1]

Section 1 – Introduction

Knowledge development within a complex battlespace to promote agility is the general theme of this paper and falls within the scope of the Command & Control Research Program (CCRP).[2] The paper specifically examines the role of military intelligence (MI) in knowledge development, and managing complexity in the battlespace. It does so by examining the different stages of the MI cycle within a comparative analysis framework built –up around the juxtaposition of traditional time & space (TTS) approaches vs. social network analysis (SNA) approaches to understanding the battlespace.

EBAO Context

The methodological context of the military's approach to planning in Upper Gereshk Valley (UGV), takes place within an Effects Based Approach to Operations (EBAO)[3] planning environment where knowledge is developed to generate desired effects and the appropriate actions to achieve them. In terms of practical implications at the battlegroup level, this was represented in a formal process particularly where it concerned deliberate operations stretched out over 4 weeks. Or in a more informal process generated by framework operations, or just reacting to developments in the battlespace. As EBAO has become the central guiding philosophy for military planning in a battlespace, most important aspect for the application of knowledge in relation to the implementation of EBAO is to ensure a "logical" relationship between end-state, objectives, effects, and actions.[4] The EBAO process constitutes the philosophy by which the MI cycle is responsible for creating the understanding that leads to optimal decision-making. No matter the level of formality surrounding the process, the MI cycle is the process of knowledge development within EBAO from which actions are developed and executed.

Agility

Agility as it is used here is intimately related to the effectiveness of the military organization in converting knowledge to decision points where actions are taken to cause the desired effects in the battlespace environment. Specifically, agility is defined by the organizational structural ability to facilitate the transfer of developed knowledge from the complex battlespace environment in a timely matter to the decision point for action to promote effects. As the MI cycle is the mechanism of knowledge development within the military organization, therefore the analytical method is a key determinant of how the effective the knowledge-action-desired effect process actually is.

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[1] Quote from Johan Galtung's "The Arab World: A Discourse about Discourses" KIMPA VITA PRESS, Wednesday, April 27,2011

[2] See www.dodccrp.org

[3] EBAO should not be confused with the independent US military Effects Based Operations (EBO) that is much more targeting driven. See Mattis (2008); For philosophical foundation see Smith (2005, 2006); Nicholson (2006);Mitchell (2004); and a doctrinal interpretation , see NATO (2007).

[4] Bi-Strategic Command Pre-Doctrinal Handbook (2007): 5-8 to 5-9; Smith (2006); Mitchell (2008)

Complex Battlespace

A complex battlespace is understood in this paper being asymmetric with both a cognitive and physical dimensions. In an applied context it refers to a counter insurgency (COIN) environment. The observations for this study are taken from daily warfighting activities in one of the most violent areas of Afghanistan (AFG), the UGV in Helmand province within the area of responsibility belonging to Task Force Helmand (TFH) and the Danish Battle Group (DABG). The UGV is one of the most complex battlespaces[5] in AFG due to the concentration of narcotics and the various competing forms of governance, known to TFH as the *official* (GIRoA)[6], the *traditional* (tribal), the *shadow* (Taliban, Quetta insurgency), and the *dark* (narcotics cartels). So for studies of approaches to knowledge development in complex battlespaces, it provides extreme conditions for a comparative analysis of TTS vs. SNA approaches.

Section 2 – Theory

Based on a constructivist interpretation of the asymmetric battlespace, complexity in the battlespace is seen as a product of the constructivist dynamic known as intersubjectivity[7] due to the constant interaction between the physical and cognitive domains. This paper also draws upon this meta-theoretical foundation built on a rationality that incorporates both utilitarian material/efficiency concerns as well as normative. However rational choice theory (RCT) is used differently here as it applied consequently to knowledge development within the context of a MI cycle in a specific battlespace.

By adopting a conventional constructivist[8] stance, we can manage the intersubjective relationship within the context of this particular complex battlespace for strategic/operational/and tactical purpose. The intersubjective dynamic is a meta-physical term that refers to the constant interaction between the physical and cognitive dimensions that will form the basis of one's subjective knowledge. In conventional constructivism the philosophical viewpoint is built on the belief that all decisions are subjectively rational. Subsequently, defining the context of where one is analyzing the intersubjective relationship one can draw conventions from the cognitive domain that are just as effect producing as those from the physical domain. By recognizing core constructivist concepts such as norms and identity, one can define the competing interests in the battlespace with SNA approaches.

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[5] For methodological foundation see Johnson & Levis (1988, 1989); Alberts & Czerwinski (1997); For battlespace definitions see Smith(2006); Mitchell (2008, 2010; 2010a)

[6] Government of the Islamic Republic of Afghanistan

[7] See Mitchell (2008;2010)

[8] In meta-theoretical terms conventional constructivism as opposed to radical constructivism suggests that one can draw conventions from the de-construction process that can be used for strategic analysis purposes. One identity for example may tell us what they may do next based on norms attached to that identity. See Ted Hopf (1998); Mitchell (2004; 2010a).

Identities and Interests in the Battlespace

A major theme in conventional constructivism concerns the role of identities and interests. It is here that conventional constructivism has the most to offer in terms of multi-dimensional battlespace analysis. It does so by treating identities as mechanical parts of an actor's formulation of their own interests and preferences obviously affecting the battlespace.[9] Here the use of conventional constructivism for operational analysis within an EBAO framework becomes rationalised, offering supplementary explanations to preference building among actors in a COIN environment.[10] For example, understanding the when, why, and how an insurgent network behaves more like a narcotics cartel rather than an ideologically driven combatants.

Section 3 – The Analytical Framework

The traditional MI analysis cycle will be used as the controlling model for a comparative analysis of observations from the Helmand study period. Each stage of the process will be examined within the context of a comparison between TTS & SNA approaches.

Since the implementation of PMESII[11] current MI organization has had to adjust to providing social intelligence to support the non-military dimensional analysis in the operational planning process (OPP). In order to do this, the focus has shifted to other than Order of Battle Reports[12] (ORBATS). ORBATS are one of the traditional products of MI output in terms of basic intelligence – it constitutes the intelligence that is used for baseline referencing to support planning as well as grounds for initiating new taskings (*direction*). It traditionally tracks such aspects of the opponent's equipment, capabilities, performance[13], as well as some relatively light socio-political matters relative to leadership or logistical support.[14] The EBAO philosophy (not doctrine) must be supported by relevant intelligence *collection* and *processing forms* the foundation for an expansion from the traditional focus solely on the military dimension. This means the *collection*, *processing*, and *dissemination* of traditionally what was seen as non-MI is playing a pivotal role in the development of the knowledge base necessary to ensure that the non-military dimensions of PMESII can be properly exploited in the OPP. The structured collection of this information is being implemented primarily in the form of human terrain mapping (HTM) throughout "edge" units in a COIN environment; however the process is only now becoming widespread, and there are varying degrees of success where it concerns the management and integration of the information into planning.

[9] See Ted Hopf (1998):174-175.

[10] Scholars having worked on this theme include almost every contributor to Katzenstein 1996, The Culture of National Security, Eyre &Suchman (73-113), Price & Tannewald (114-152), Finnemore (153-185), Herman (271-316), and Berger (317-356.)

[11] Political, Military, Economic, Social, Infrastructure, Information

[12] UK MOD Doc (1999):1A-2.

[13] Libicki & Johnson (1995): 48-49 (Good example of the comparative tech focus)

[14] Military intelligence output is divided generically into basic and current intelligence – current intelligence is situational and not referential in character.

Fig.1.0 Intelligence Cycle
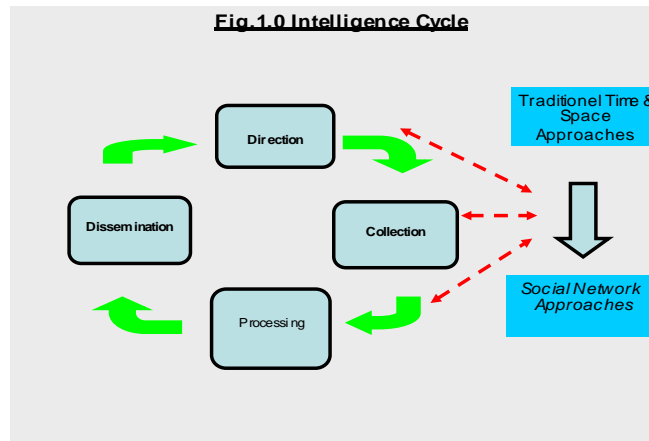
The analytical framework is built on a comparative analysis of two different methodologies for the generation of actionable intelligence, the linear TTS distribution of areas to analysts, and SNA, where by well-defined models and hypotheses based on the recognition of norms and identities guide desired effects production.

The TTS division of AOs has usually been determined by topography and a units' physical capacity to manage that area vis-à-vis the expected opposition. Consequently MI analysis has had a very strong tradition for TTS descriptions associated to an AO. The complete reliance on this approach is being put to the test, with requirements for both a physical and cognitive understanding of the battlespace. Development of SNA approaches to the processing of intelligence has been used in civilian intelligence for the better part of two decades, starting with the first adoption of link analysis (standing model) over a timeline. However the development of both internet and GSM technologies continues to improve the capability of information sharing, so that SNA approaches have become more useful to current military operations.

From the period of August 2010 to January 2011 within the BG intelligence section Both TTS and SNA approaches were used for managing the fusion analysis. TTS divided the battlespace into geographical areas mainly based on convenient topographical landmarks such as a river or road. While SNA approaches were implemented for the first time, using their standing models (link charts usually), and hypotheses generation that transcended the TTS topographical divisions of the main AO.

The objective of the comparative analysis is to highlight the advantages and disadvantages of using these different approaches in a COIN environment. A COIN environment is understood as having both a physical and cognitive domain, one of the key differences between the two approaches is the point of departure for operational planning. SNA approaches typically start with identifying social systems within the environment and in the process attributing identities, interests, and functions to different social organizations. For example, the role of narcotics financer has social norms and interests attached to that identity. TTS approaches have a start point based on the physical domain, anchored in the appropriate topography of a given AO and opponent C2 structure.

Both approaches are subject to the EBAO philosophy for planning actions within a battlespace. Both approaches are also suited to this philosophy from their respective start points, as long as one accepts that emphasis on the physical domain does not

automatically refer to kinetic actions, nor more than emphasis on the cognitive domain does not exclusively refer to non-kinetic actions. For example an overwhelming show of kinetic 'muscle' might be deemed useful to convince local national undecided local nationals which side is strongest (cognitive effect.) Where they differ fundamentally is the nature of the products they produce, TTS approaches tend to be focused more on description than prediction, while SNA approaches tend to serve prediction better, due to a reliance on iterative models.

Section 4 - Direction

How do we define the battlespace?

Direction is the most important phase of the MI cycle. It will determine where limited resources should focus in terms of supporting the collection plan for use with deliberate & framework operational planning, as well producing actionable offensive and defensive (*force* protection) intelligence. However all cycles must have a start point and when taking over a battlespace that usually begins with an Intelligence Preparation of the Battlespace (IPB), an overview of all that is believed to be important to situational awareness to provide a basis for the first planning process.

BATTLESPACE ARRIVAL JUL-AUG 2010

Upon arriving to the AO the traditional approach was well established with SMEs (Subject Matter Experts) set to different geographical areas of the AO. The daily routine was to read incoming reports relative to their respective areas and glean information for the daily INTSUM (Intelligence Summary). Direction was provided primarily by the bi-weekly ICP (Intelligence Collection Plan) to assets as to what to collect. The focus was primarily 'red forces' and material threats in their specific areas, which by far was the IEDing (Improvised Explosive Devices) and over-watch of resupply roads to fixed PBs (Patrol Bases) through the AO. Human terrain mapping had not yet been implemented in any of the sub-unit AOs, and there were what can best be described as - IED attrition lines - that limited the FoM (Freedom of Movement) of the sub-units, including their capability to get out to the LN (Local Nationals) to conduct human terrain mapping. Despite the necessity in a COIN (Counter Insurgency) that ever soldier is an intelligence gathering sensor, without FoM to engage the LN we are missing hundreds of possible sensors throughout the AO. Topographical emphasis was on the Helmand river and how it also restricted our FoM, suggestions were also being made that the Helmand river is a barrier for INS. However intelligence reviews before the arrival suggests INS use the Helmand to their advantage against us. There was little to no socio-economic intell available, but this would also be a result of our limited FoM and lack of human terrain mapping. It would appear that to get back on the COIN track we would have establish enough FoM for the conventional forces to engage the LNs. This was not what we were hoping for as it would require a significant degree of kinetics to break what appeared to be a very systematic INS IED network. Furthermore, there was no further information as to the role narcotics or tribes play in our AO, however we were aware from our own intelligence reviews that they played a significant role in certain areas affecting or AO.

TTS - Direction

The first objective for direction was to assess the picture presented by previous teams that worked purely with TTS methods, small AOs were neatly divided and the majority of patrol bases (PBs) had established a 'troops in contact' (TIC) line at certain distances from the PBs. This simply means that according to the troops at the PBs, if you cross that line you will likely be attacked, or you would face a belt of IEDs too risky to go through.

**Map 1.0 Traditional AO Division**
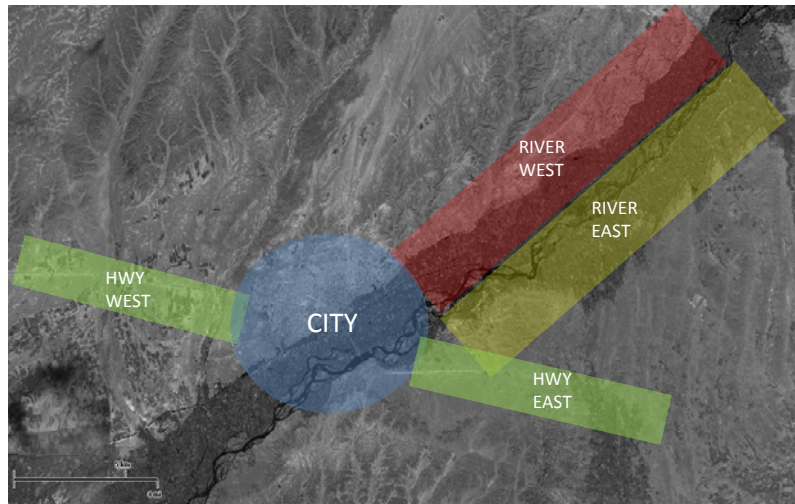
The picture of INS built by the linear TTS approach were that small INS fixed in AOs matching our own, each unit with own hierarchal structure, defending a territory at the established TIC lines. Focus was clearly on force protection issues with regards to preventing IEDs being seeded on resupply routes to outposts, or giving warning of possible small arms fire attacks on PBs. This included a focus on identifying INS training, tactics, and procedures (TTPs) with focus on their available weapon systems in the AO.

SNA - Direction

Applying SNA to the existing picture quickly presented several key issues not raised by the situational awareness produced through the TTS approach. The first was that the INS IED production, distribution, and laying was systemic and organized in manner that transcended the boundaries of established coalition force (CF) AOs, and therefore required INS to move throughout the various AOs - and beyond. The second was that poppy fields and narcotics played a key role in determining the location of key INS C2 nodes, and what type of activities they would engage in, and when. Thirdly, that the traditional tribal system also had a role, either by its presence or its absence, among local national (LN) across the different AOs. Finally it was quickly determined that corruption within the official authorities would also affect our planning especially when the strategic goal is to promote the legitimacy of the official government among the LNs.

**MAP 2.0 Network
Approach**
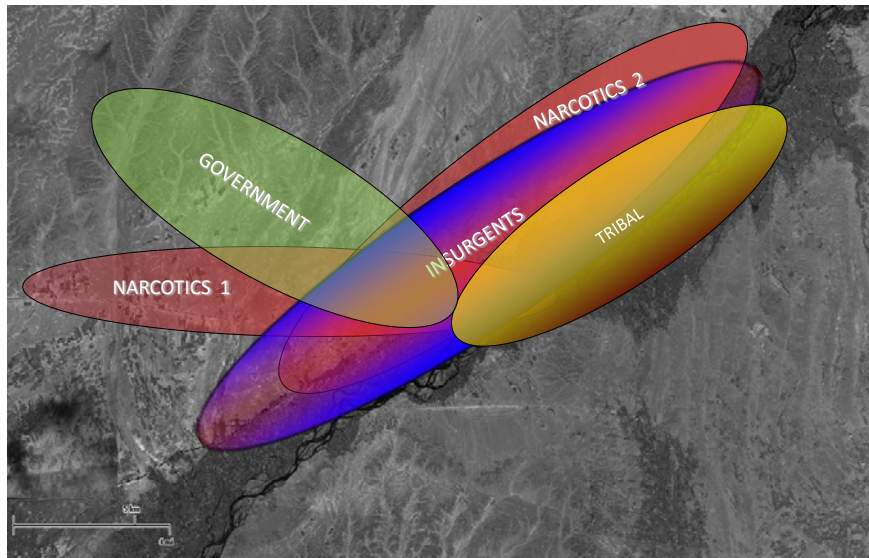
Working off of these standing models, the SNA approach seemed to fit existing fusion analysis from reach back capacities, and historical streams of covert intelligence. It indicated four existing types of governance that could form the basis for standing models, the *official governance* being the state; the *shadow governance* run by the INS with theological undertones and a competing judicial capacity; *dark governance* run by the narcotics cartels; and finally the *traditional governance* run by tribal elders.

Assessment - Direction

In terms of providing situational awareness for direction, complete reliance on TTS had some serious deficiencies when taken in light of recognition for the overarching EBAO framework. The greatest fault was the dominance of linear time and space divisions and focus on the military capabilities of the INS. It was apparent that the TTS approach had facilitated the development of a battlespace picture that mirrored doctrinal principles of conventional warfare, rather than then describe the COIN environment. Therefore the possibility of implementing SNA analysis to the existing battlespace picture that was built solely on TTS method - was also an opportunity to clearly identify the value-added of SNA approaches.

1) In terms of generating a multi-dimensional understanding, there was little to no integration of the different dimensions in the TTS approach. For example, the location and role of poppy fields was not tested for relationships to the insurgent activity. Despite streams of reliable reporting that indicated otherwise, poppy was seen as a social dimension descriptor, and not relevant to the INS (military) situation. When this issue was addressed under a SNA analysis, it helped us to better understand what PMESII information was needed in order to support kinetic and non-kinetic operations. For example, *landownership* became an important issue as it appeared that narcotics interests where driving parts of the insurgency in our AOs.

The TTS approach lacked *awareness completeness*[15] and *awareness accuracy,*[16] this was greatly improved by implementing SNA and clearly supported the PMESII framework for understanding a COIN environment.

2) The picture presented by the previous team TTS was consistent with earlier teams that were *not* operating under a PMESII framework. In short, a sign the TTS approach, with its roots firmly on conventional warfare, had difficulty adjusting to multi-dimensional battlespaces of the COIN environment. In this regard, *awareness consistency*[17] was high with earlier teams despite the introduction of a multi-dimensional understanding back in 2008 at ISAF HQ level. An indicator that change initiated from the top with the implementation of PMESII, had yet to take firm hold at the outer edges of the military organization.

3) On applying SNA it was clear that the picture presented by the TTS approach was not at all consistent with ground truth, despite its linear expertise. The best example was that the earlier team saw the Helmand River as an obstacle for INS, because it was for our vehicles, and thus used it in their understanding of INS FoM. However very reliable reporting clearly indicated the INS had never been frustrated by the river, to the contrary they used it to their advantage with crossing points pretty much anywhere they wished for resupply and/or evacuation of wounded or dead. So even though the TTS approach naturally focused more on the topographical implications of the terrain, it projected an inaccurate understanding as to how the terrain affects the insurgency. That coalition forces had difficulty crossing armored vehicles across the river did not mean that INS could not cross on pull-wire rafts, small boats, or with their superior knowledge of seasonal water levels -on foot. *Awareness correctness*[18] and *awareness precision*[19] concerning the nature of the insurgency FoM was severely damaged by the projection of 'conventional' battlespace assumptions onto the INS.

4) Engaging the different non-military dimensions required completely different streams of information than was produced by TTS method in order to support the promotion of local government. Therefore the *awareness relevance*[20] produced by the TTS was negatively affected by a lack of focus on the non-military dimensions, to the extent that it did not synchronize with strategic objectives of TFH. To understand how one can promote GIRoA, one must be able to collect relative social information; the TTS understanding inherently limited the pursuit of this ability.

Summary - Direction

In terms of providing situational awareness for the commander to issue the initial direction, it was apparent that the TTS approach was unable to manage multi-dimensional analysis

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[15] Awareness completeness refers to the extent to which awareness necessary to form understanding is obtained. Awareness completeness includes awareness about capabilities, environment, forces, intentions, and mission.

[16] Awareness accuracy refers to the appropriateness of precision of awareness for a particular use.

[17] Awareness consistency refers to the extent to which awareness is consistent with relevant awareness at an earlier time period.

[18] Awareness correctness refers to the extent to which awareness is consistent with ground truth.

[19] Awareness precision refers to the level of granularity of precision.

[20] Awareness relevance refers to the extent to which awareness obtained is related to task at hand.

within the PMESII framework. All other dimensions within the PMESII framework were primarily used as a formulation of a general knowledge background picture for the military dimension; for the most part they were not linked to their impact on the military aspects of the insurgency. When SNA method was applied to the same reporting, it became very apparent that tribal affiliation and narcotics played a very important role in the insurgency. It also became apparent that corruption was a major obstacle to partnering with local security forces as well as development of official governance. For example, in some areas LN invited the INS back into areas that had been cleared, because corrupt officials taxed too much, or simply because there was no official governance or tribal governance available for inter-communal conflict resolution.

Finally, and most surprisingly, the TTS approach had severely damaged the BGs time and space understanding of the INS FoM. The approach tended to force INS FoM to fit our individual unit's FoM limitations due to a linear doctrinal 'baggage.' One of the best examples was a PB 20km away from the main base took our resupply lines up to 4 hrs to reach because of the TTPs to be followed or counter the IED threat. In that time, wanted INS could easily make the Pakistan border just over 2 hrs away. However, the tendency was to pack the FoM of the INS into the same time and space lines we drew on maps based on our own capacities and limitations. Considering these unexpected shortcomings of a purely TTS approach along with those in light of PMESII, it became completely unreliable as the sole approach for an EBAO framework that had to account for both physical and cognitive dimensions of the COIN environment. Though necessary for the topographical understanding of the battlespace, the inaccuracies of interpreting the physical nature of the INS FoM by projecting their own understanding actually distorted the fundamental physical nature of the battlespace. It corrupted the physical dimension while ignoring the cognitive dimension.

Section 5 - Collection

What do we collect to insure accurate situational awareness for action planning?

As direction drives collection, the initial assessment provided to the Commander in order to provide direction, will greatly influence the generation of the intelligence collection plan (ICP.) Which is essentially a breakdown of the fundamental questions the commander would like answered known as priority information requests (PIRs) into specific questions for our collection assets. As one would expect, the questions would differ as to which method was used to define the original battlespace. Once again the opportunity to see what the TTS method had done with the implementation of PMESII with regards to the ICP presented itself. And again, it was an opportunity to clearly see the value added by SNA approaches.

TTS - Collection

The TTS approach focused almost explicitly on the identification of insurgent persons and positions within the BG defined battlespaces. Even though there was some acknowledgement of the multi-dimensional battlespace and the PMESII framework, it could be best described as superficially represented in the collection focus.

Table 1.0 TTS Approach to ICP
What are the names of INS in the AO? What weapons due they carry? That are the names of INS commanders in he AO?
Do local INS have family in the area?
What is the names of the INS patrol leaders?
How often does the INS patrol in the area?
Who is the mullah for the INS?
Where do the INS come from?
What type of vehicle do the INS drive?
Do any of the INS use a Motorollo? Name?
Which INS does most of the talking at shuras?
What is the name of the INS judge for the AO?
What is the name of the INS who decides how much the LN will be taxed?
Who are are the INS in the area? What are their function?
Where do INS live/BDL in the area?
Where are there INS staging areas in the area?
Are there HME storage facilities or locations in the area?
What are the family names and tribal affiliations of the INS in the area?
Where are there arms caches in the area?
Which INS gives the orders to the other INS?

There was a strong tendency to ignore the implication of the totality of the COIN environment within sub-unit battlespaces. This had a direct effect on operations where the majority of patrols sent out had no intelligence objectives, but were simply classified as ground dominance patrols (GDPs.)This in turn also contributed to the distortion of INS FoM noted in the previous section.

SNA - Collection

The implementation of a SNA approach immediately began to challenge a year old understanding of the battlespace that was packed into a conventional division of the AO. The first step was to engage PMESII as directly as possible into the ICP so the multi-dimensional aspects of the battlespace could be developed.

Table 2.0 SNA Approach ICP Example
What are the names of major landowners (Khans), their tribal affiliation, their place of residence, contact info?
The names of elders, their tribal affiliation, their place of residence, contact info?
The names of mullahs, their tribal affiliation, their place of residence, contact info?
The names of doctors, their tribal affiliation, their place of residence, contact info?
The names of shop owners, their tribal affiliation, their place of residence, contact info?
The names of other major employers, their tribal affiliation, their place of residence?
The names of other Maliks, their tribal affiliation, their place of residence?
Who owns the compounds?
Who buys the produce (who do they sell to and where)?
What do they grow on their land?
How do they settle local disputes?
Do the INS provides shadow governance?
How much do INS tax LN?
How much do GIRoA/ANP tax?
How do LN receive the local/regional/national news?

The second challenge was to use this knowledge to expand our own understanding of the INS in order to better reflect *their* time and space issues, that would help us guide

collection. This would turn out to be a challenge more dependent on our own organizational culture than the INS organization. Issues concerning the how force ratios were built continued to be a challenge throughout the period, estimated number of INS in AOs, were literally being forced into conventional understandings through power point presentations that did not reflect ground truth. For example, if we said we knew of 30 INS operating in AO, this was turned into an assembled INS platoon and walking around a 4 km2 AO by the planners. This could not be further from the reality. INS rarely assembled more than 5 armed personnel for extended periods in time (10 min), the majority of time INS were not discernable from the non-insurgent LN. Furthermore, some INS lived up to 40km out of the AO – but commuted to their 'INS' job every second day to place one IED and return home. That 30 INS were known to operate in a 4 km2 AO did not mean they had a standing platoon. If it were only true – we would not have to spend a lot of resources trying to track individual INS moving amongst the LN within a 200 km2 area. If only it were true, we could get all the INS in one AO when they held their 'conventional' platoon HQ evening briefing. This distorted view of INS FoM distorted force ratios necessary for operations, it was a situation produced by the TTS approach, and it was an issue that took four months to sort out with operational planners.

Assessment - Collection

1.) When we compare the *information accuracy*[21] of the two approaches it was clear that the TTS based ORBAT approach to intelligence collection was inaccurate to the degree that it seriously damaged our understanding of linear issues relevant to INS FoM. In order to match our own linear restrictions set by our own capacities or doctrine, we focused collection on an INS organization that topographically fit into our unilaterally defined operations boxes. The topographical delineation perpetuated collection that saw an INS C2 structure built to fit that time and space understanding. When the SNA approach was applied to collection, it not only improved *information accuracy* with regards to the INS C2 of the AO, but it improved our linear understanding as to how INS move throughout the battlespace and why.

2.) At the start, the actual implementation of multi-dimensional collection was often not carried out, quite simply the required questions were not deemed operationally relevant enough to include in a formal ICP to edge units. The collection necessary for *information completeness*[22] was not only inhibited by the geographical battlespace boundaries we established to match our organic capacities, but it was also inhibited by a deep seeded culture conventional warfare. This approach perpetuated the lack of exploration of the non-military dimensions of PMESII. Even when non-military information was sought, for example identifying the major landowner of poppy fields, as soon as it was determined he did not live in a unit's AO, the whole relevance of poppy as a line of inquiry was dropped by the unit. The implementation of a SNA approach to collection was slow with conventional units at the edge. Ironically it was our special forces (SF) units that helped establish the non-military dimensions as operationally credible to effective planning, and did so to a sufficient degree as to convince conventional forces that it was the way forward.

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[21] Information accuracy refers to the degree to which information quality matches what is needed.

[22] Information completeness refers to the extent to which information relevant to ground truth is collected.

3.) At the start, the collection process was being driven by conventional thinking and conventional TTS understandings, and for this, *information correctness*[23] suffered the most as collection was subverted by conventional perspectives of warfighting. Once the SNA approach to collection became a driving force behind situational awareness, the quality of planning improved immensely, specifically where it concerned the synchronization of the kinetic and non-kinetic operations. For example operations designed to hold a perimeter, while a shura was concurrently taking place, became the norm.

4.) As a direct consequence of the role the intelligence cycle plays in operational planning*, information precision*[24] and *information relevance*[25] necessary for effective operational planning was undermined by the complete absence of direction in all other dimensions of PMESII except for the military dimension in the ICP. This had a direct negative effect on the quality of operational planning in terms of relevance to the COIN reality. As the SNA approach to collection began to take hold, the quality of operational planning began to improve greatly, perpetuating the further development of collection in the non-military dimensions. A good example to this was the traditional '*ground dominance patrols'* (GDP) becoming replaced by patrols designed solely to conduct HTM through the holding of shuras with the LN.

Summary - Collection

Reflecting the perpetuating forces of the intelligence cycle, the consequences of the dominant TTS approach where it concerns direction could easily be identified in the approach to collection. The result was inaccurate situational awareness for operational planning, organizational insulation from reality, disjointed actions from effects, and a collection and planning process built on perpetuating inaccurate information. Furthermore, the absolute importance of integrating the operational planning with the collection was highlighted as 'the' issue most severely damaged by conventional thinking. The implementation of a SNA approach to collection also highlighted a very important organizational fact, that when operating in a COIN environment there was a powerful increase in intimacy required between collection and operations. The SNA approach to collection perpetuated intelligence led operations, the TTS approach did the opposite, promoting the building of plan after which descriptive intelligence would be added.

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[23] Information correctness refers to the extent to which information is consistent with ground truth.

[24] Information precision refers to the level of measurement detail of information item.

[25] Information relevance refers to the extent to which information quality is relevant to the task at hand.

Section 6- Processing

How do we manage and exploit the information collected?

TTS - Processing

TTS approaches work primarily on establishing the ORBAT of their opponents. In doing so, they primarily focus on the physical characteristics of their opponents' strength, skill, and location. On arrival in theatre ORBATs were presented for the different units AOs, this would include a C2 structure as well as a capabilities assessment. Furthermore the focus was squarely on where and what type of IEDs were in the AO, and the counter-measures to employ to avoid those IEDs, including the establishment of TIC lines and no-go areas due to IED seeding or small arms fire (SAF.)

Map 3.0 INS C2 TTS Approach
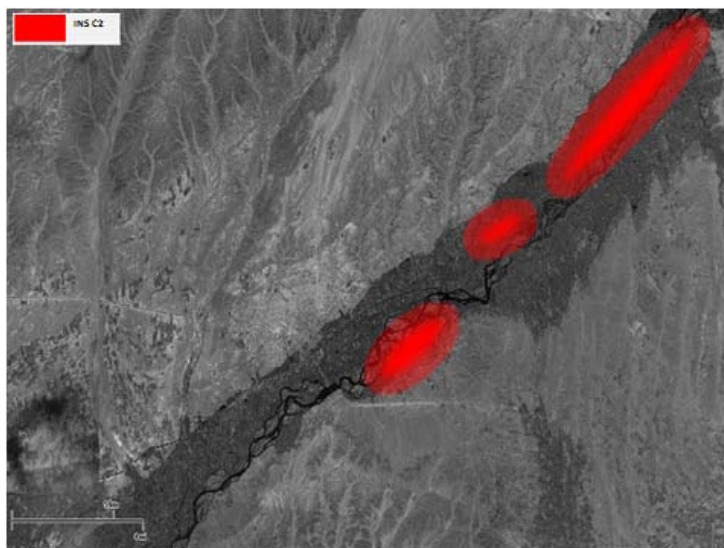
INS C2 structures were described as local hierarchal cells that operated in very restricted geographical areas that, according to their own calculation, interestingly enough matched our own AOs. There was very little interest shown in understanding flank AOs, despite in some cases them being less than one km away from their own PB. The focus was clearly on force protection – how to find the IEDs absolutely dominated the streams of information to be collated. When it came to the INS themselves, emphasis was on filling out and updating hierarchal cells with possible names of INS as well as their military command function. Intelligence collected was collated within this framework, and ended with presenting INS C2 structures that apparently had the same type of hierarchal formation as conventional forces. In fact, the implication was that they we all had the same operations boxes and the majority of AOs were facing INS organized in platoon type formations. Every AO had an INS hierarchal structure apparently built for precisely that AO.

This was the first indication that the TTS approach was filling in the conventional format for ORBATs that historically laid the most emphasis on description rather than building an understanding for prediction that better serves the principles of EBAO and assessment of desired effects in a COIN environment.

Fig. 2.0 TTS C2 Approach
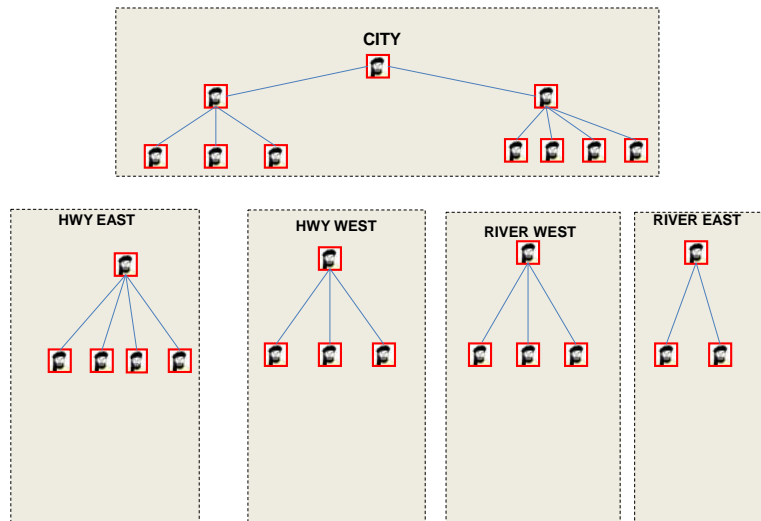
SNA - Processing

The first real application of SNA analysis to manage a broader spectrum of battlespace domains was based several different streams of reliable information from the INS themselves. It was dominated by discussions of activities related to narcotics in our AO, and once the collection focus was broadened, it became apparent that narcotics reached into every dimension of PMESII. It was decided then to build and parallel track the narcotics networks alongside the INS networks to understand the nature of the INS-narcotics relationship. This resulted in a realization that in terms of time and space, the key INS C2 nodes were sitting on some of the highest poppy density areas in our AO.

Map 4.0 INS C2 vs. Poppy Density
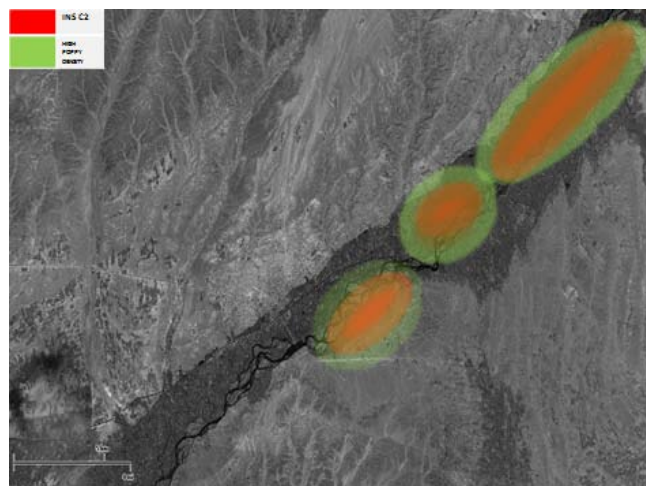
This led to focused collection effort to populated narcotics related models, including their C2 with respective functions in order to cross-reference, this will be examined shortly. However, the narcotics issues stretched over several PMESII dimensions, this included the political in terms of corruption, economic in terms of the local economy, the social in

terms of violence, and even infrastructure dimension as labs used for producing morphine paste were also linked to IED and homemade explosive (HME) production in the poppy off-season.

Fig.3.0 SNA Approach


Cartel: **ALPHA Network**
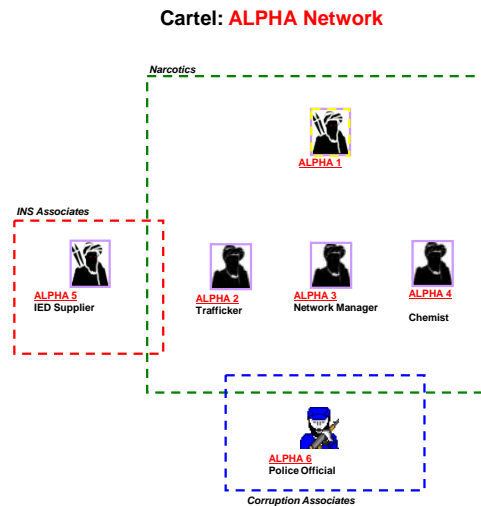
From a pure time & space perspective once we cross-referenced the narcotics and INS networks with known tribal territories, it once again provided enough explanation to positively identify two narcotics cartels as tribe "X" cartels, due to the fact that the INS C2 nodes and narcotics C2 had many from the same tribal affiliation. It is from this analysis that we were able to provide intelligence as to the areas likely to be the most resistant to GIRoA influence, and the best targets for degrading the INS supporting infrastructure to create "white space" to promote the influence of the national government.

Map 5.0 INS C2 vs. Poppy Density vs. Tribal Territory
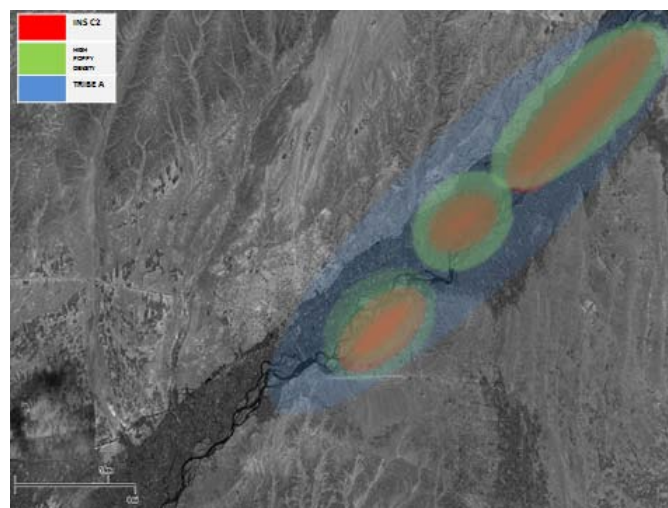
Using standing models for tracking allowed us to develop a situational awareness where it concerned the development of actions to produce desired effects, and the possible undesired effects to proposed actions. A good example was the case of whether or not to eradicate poppy in farmers' fields because it was a main source of income for the INS. Though it would destroy income for INS with which they buy weapons and make IEDs, it would significantly damage the LN farmers' economy and not serve the objective of creating "white space" for governance development. And as the profit margins per kg of poppy were the smallest for the farmers, it did not make much sense. Instead, it was decided that processing labs, owned and run by INS or senior cartel members, should be targeted, as the farmers had already been paid, and the profit margins for the narcotics-barons began to skyrocket with the selling of morphine paste.

Fig. 4.0 SNA Standing Models
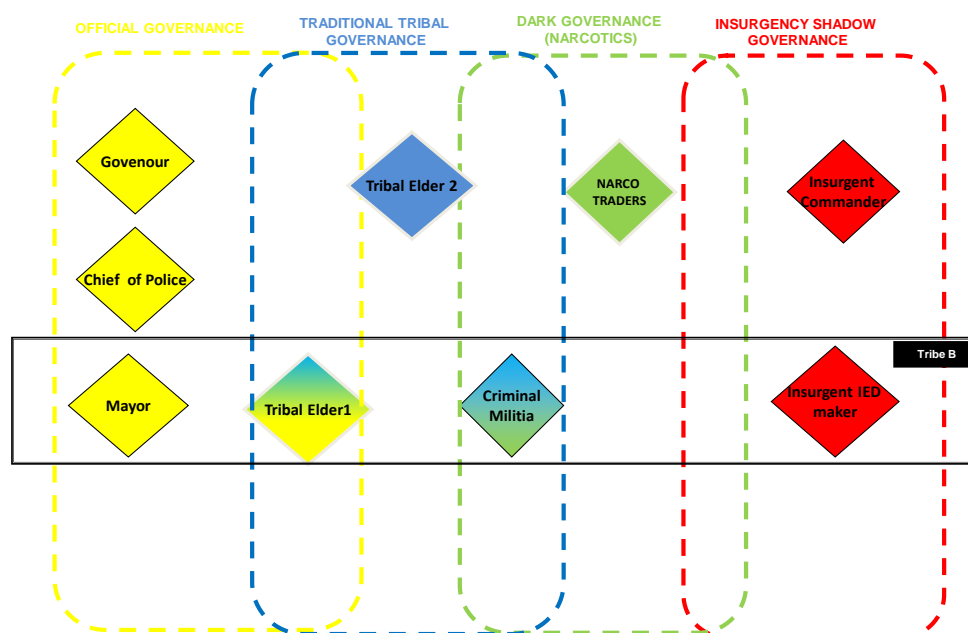
Furthermore, we could establish a framework for assessing 'governance' that could be used for assessing different sub-unit AOs with respect to each other. This helped with planning, synchronization of actions, as well as resource delegation for the purposes of achieving the desired effect. In the Fig.4 example, 'Tribe B' was a major player with links across all governance dimensions and became the focus of kinetic and non-kinetic operations.

Assessment - Processing

1.) In terms of the *mental model confidence* [26] produced by both approaches in a complex battlespace, there was no contest. The TTS hierarchal time and space representations of the INS C2 did not produce plans that had the desired effect. Instead they were cause to a complete break downs in logic as to the nature of the

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[26] Mental model confidence refers to the degree of subjective confidence that the mental model in use is appropriate to the situation at hand.

INS and the local economic environment. Very reliable information that did not deal with INS weapons, IEDs, or military plans was simply ignored, as the existing approach did not have any place for it. Once the non-military network models were up and running, the improved intelligence produced better result that in turn produced better intelligence for further operational planning.

2.) In terms of *mental model relevance*[27] the TTS approach ignored the non-military dimensions by force of linear habit. The difference between the situational awareness provided by intelligence produced by SNA approaches as compared to the TTS approach was extreme. The doctrinal implications were clear, when operating in a COIN environment SNA approaches perpetuated a more relevant understanding of the situation, TTS in terms of processing undermined the discovery of the relevant non-military information, and thereby in itself perpetuated MI irrelevancy. When considered in light of the EBAO framework, there is an inherent weakness with reliance on TTS approaches to producing relevant knowledge for effective actions. This can be related back to the dominate activity conducted by sub-units on our arrival, the perceived necessity for GDPs in the conventional understanding. The logic was never challenge by conventional thinking however the application of SNA modeling soon highlighted the irrelevance of these patrols. INS living amongst the local population 24/7 saw these very short periods of coalition presence (5-10 min walking through a village every 3rd or 4th day) simply as opportunities to better focus their IEDs. The adoption of a SNA approach to processing provided reasons for these patrols to stop and hold shuras, collecting relevant information such as the identity of key leaders, understanding the local economy, the local justice system, and the nature of the role the INS played in that village. This better served the strategic objectives of the BG.

3.) The *mental models richness* [28] or the breadth and depth of the range of models produced by the TTS approach was insufficient for the complexities of the COIN environment in Helmand. Furthermore, as the intelligence cycle does not stop, the heavily descriptive and ORBAT approach perpetuated a conventional description of a battlespace, and conventional operational planning. The TTS approaches did not look further than the INS C2 and capacities, so once the SNA approach was applied, the TTS perspective appeared to defy its own logic and distort the reality on the ground.

Summary - Processing

It was crystal clear that in order to ensure a better understanding of the action and effects needed for an AO, a more complex understanding of the battlespace would have to be generated than that produced by TTS approaches to processing. TTS approaches to modeling reflected a very static opponent who organized themselves in manner somewhat similar to the last few hundred years of western military organization. TTS approaches could not manage the multi-dimensional analysis needed for a COIN environment and

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[27] Mental model relevance refers to the extent to which mental model in use is appropriate to the actual situation and task at hand.
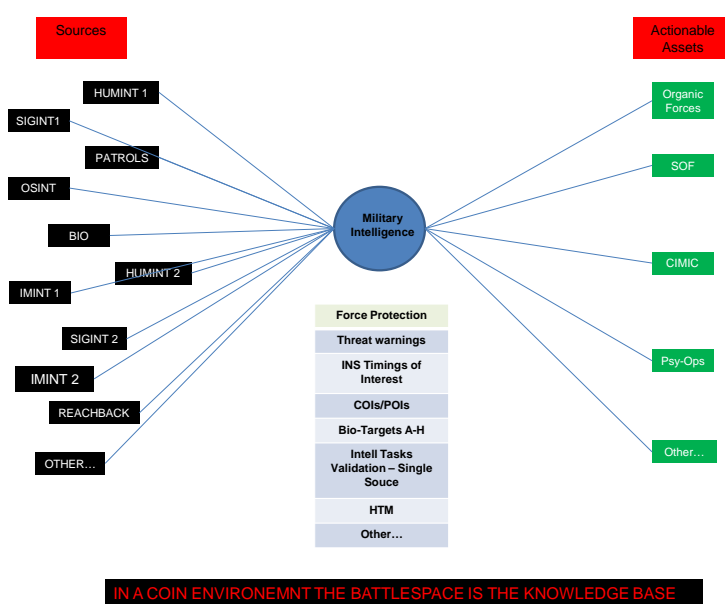
[28] Mental models richness refers to the breadth and depth of the range of the models that can be brought to bear on the situation.

EBAO. The SNA approach, driven by relevant collection, divided itself as needed among relevant themes, dictated by the intelligence streams being collected. It provided the breadth and richness that better reflected the PMESII understanding of a COIN environment, as well as more accurately portrayed the ground situations for EBAO. However, TTS understandings did have a key role to play in the cross-referencing of the different SNA models, and providing key links as to the role each different governance dimension played topographically. So it is worthy to re-iterate here, that TTS vs. SNA is not an exercise in zero-sum.

Section 7 - Dissemination

The most important issue relevant to the dissemination of knowledge in a complex battlespace is *timeliness*. In a COIN environment the intelligence deteriorates extremely quickly, in our AO, mobile phones were everywhere and provided a solid communications base for INS during the daytime hours. We had to compete not only in terms of FoM, where INS had a tremendous advantage amongst LN, but despite our technological superiority in general; their widespread use of the mobile phone with SMSs, gave them an advantage in terms of information management in the battlespace due to their natural tendency for loose networks. Essentially the objective of dissemination is to maximize battlespace agility. In this regard the speed at which knowledge is developed and delivered to the capacity with authority take action is the key.

**Fig. 5.0 Battlespace Agility at the Edge**

It is very important to note that where it concerns dissemination technological capacities for information management are fundamental to insuring the organizational structure has optimal communication. Though not the focus in this paper, it is suffice to say here that the technological advances in communication equipment and software over the past 20 years, has been tremendous. Essentially the development of the internet and GSM has changed how we communicate to such a degree, that our organizational development has yet to catch up.

The TTS time & space approach to dissemination is directly connected to the traditional military organization which is hierarchal in nature. The conventional C2 structure for the battlegroup in Helmand was no different, with several echelons of decision-making 'stove-piping' information flows to authorities not directly in control of actionable assets, but organizationally responsible for complete information to the next echelon.

Fig. 6.0 TTS Dissemination Structure
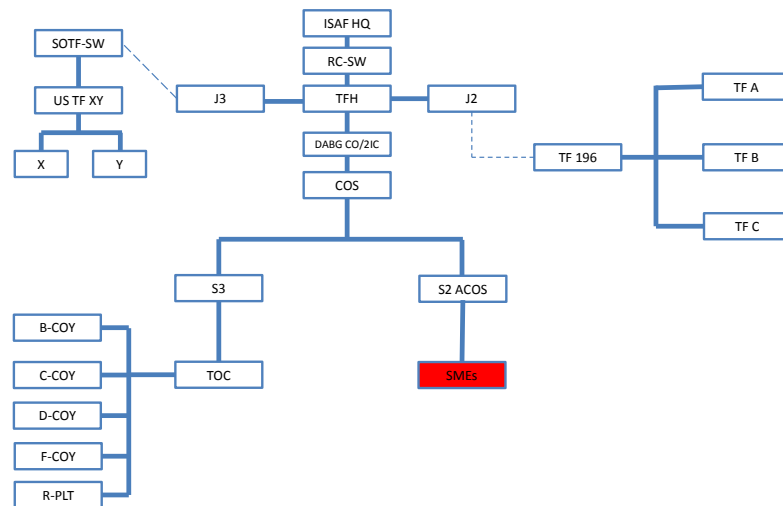
1. In terms of *action accuracy*[29] and *action precision* the actions produced based on disseminated knowledge through the structure were rarely executed in time to achieve the intended purpose. Furthermore, the number of actions produced and the results of those actions were minimal. An issue was the formal planning process itself that once set in motion found it very difficult to adjust, despite information being disseminated continuously almost in real-time up the hierarchy. So real-time capability lost its value to bureaucratic procedures.

2. Though *action appropriateness*[30] based on disseminated information was almost always relevant on the delivery of information, the COIN environment of Helmand was merciless with regards to the longevity of knowledge produced. Appropriateness degenerated in tack with the knowledge produced over time.

3. Reflecting the TTS stove-piping nature *action completeness*[31] and *action synchronization*[32] often suffered as the comprehensive principles of synchronizing action became subject to a hierarchal based system of distributing orders back down the structure, reducing the level of information accuracy and completeness for

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[29] Action accuracy refers to the extent to which actions executed are directed to the intended purpose.

[30] Action appropriateness refers to the extent to which actions executed are the appropriate ones to achieve the intended purposes.

[31] Action completeness refers to the extent to which actions executed encompass the full scope of the plan or order.

[32] Action synchronization refers to the extent to which there is purposeful arrangement of time, space, and purpose.

contributing parties to a more comprehensive plan. Where it concerns dissemination 'stove-piping' in itself is the opposite of flat-lining and meant flat-lining outside of the hierarchy on shared networks was not exploited, as were common geo-rectification programs, outside of the intelligence cell.

4. *Action efficiency*[33] and *action timeliness*[34] based on the TTS approach to dissemination was dismal. Formal processes originating from the hierarchal system simply could react to dissemination in a timely or effective manner. Information simply was being communicated through too many filters before it arrived to the decision-point of authority and capacity. Furthermore it was not only the structure in itself that created issues of dissemination, but a culture of information ownership an inherent characteristic of a hierarchal organization. Each echelon anxious to prove their worth to the next in commands, will hold important information until that opportunity arrives. This despite the fact that the integrity of the information fully reliant on timeliness, deteriorates even further. For example, the presence of a wanted INS at specific location, might be withheld from action authorities until the scheduled briefing with their chef, if there was a chance they might lose credit for it by relaying it immediately.

SNA - Dissemination

Where it concerns the principles of battlespace agility, a SNA approach to the dissemination of knowledge identifies the decision-points consisting of the authority and capacity to take action, and exploits technology to insure that communication to those decision points are as immediate as possible.

Fig. 7.0 SNA Dissemination Structure

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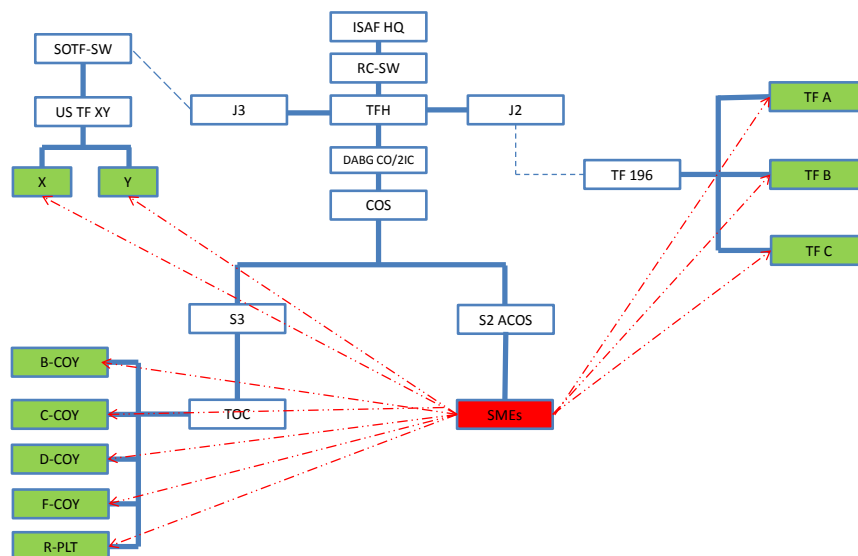
[33] Action efficiency refers to the extent to which actions executed are efficient in the use of resources.

[34] Action timeliness refers to the extent to which actions are executed at the time required by the plan or order.

1. In terms of *action accuracy* and *action precision* the actions produced based on disseminated knowledge through the structure were executed in time to achieve the intended purpose. In fact, it was so effective that a system of prioritization had to be developed due to limited capacities.

2. *Action appropriateness* based on disseminated information was almost always relevant on the delivery of information; the appropriateness was maintained in tack with timeliness that was greatly improved by the SNA approach to dissemination of knowledge.

3. Reflecting the networked nature of the organization *action completeness* and *action synchronization* improved greatly, particularly where it concerned the synchronization of actions along the flanks with our own linear requirements for effects. This was mainly due to the use of flatling technologies available including 'sharepoint' pages, J-Chat, email, common geo-rectified databases, and the implementation of TiGR. Essentially, all persons across the breadth of ISAF organization could see the information they needed as soon as it was posted. Specifically, where it concerned synchronization, operational plans were also posted in draft format for all in the network to suggest input. This constituted a further dissemination of knowledge that promoted a self-synchronization of edge units.

4. *Action efficiency* and *action timeliness* improved immensely with adoption of SNA dissemination. The effect was stunning where it concerned improved timeliness, increasing the efficiency of the transition of knowledge to action for effect. The result was dramatic increase in the production of desired effect.

Summary- Dissemination

In a COIN environment, effective dissemination is essential to maintaining battlespace agility, as well as providing the basis for maintaining the initiative over the INS. Once the knowledge is produced it must be delivered in a timely manner to the capacity with authority to act, or an opportunity is lost. The ability to 'use it or lose it' is what defines effective dissemination in a COIN environment where INS have access to GSM based technologies. It is here the social organization plays the pivotal role on how effective dissemination of information will be. Timeliness tops the list of variables. When intelligence is not delivered in a timely manner, all other variables such as action appropriateness, and synchronization, suffer. In regards to the 6 months in Afghanistan, this point cannot be emphasized enough. Social organization must facilitate dissemination and not disrupt, or delay it. Ironically the INS had the advantage in this regard as they operated under a lose network C2 structure that is naturally better at exploiting windows of opportunity. It was also clear that our insistence on maintaining a conventional hierarchal social organization undermined our own technological ability to 'even' the playing field with the INS. It is here could really feel the absence of SNA approaches to organization the most, and it is here we would be forced to fall a few steps behind our opponents, reducing our effectiveness in the battlespace.

Conclusion

Where it concerns knowledge development, MI is at cross-roads of historical proportions. It can continue to submit to the 19th century tradition of focusing exclusively on time & space with regards to military material/efficiency concerns, or it can adapt to the 21st century and accept that to fight effectively it must develop knowledge to operate in multi-dimensional battlespaces. At the same time, authority should not only accept the fact that actions must be based on knowledge, but should be the most foremost proponent. This is not to suggest that ORBATs must disappear, far from it, however they must now be placed in the context of the other relevant PMESII dimensions. Furthermore, it is in the direction phase of the intelligence cycle that the foundation will be set for operational planning. Will operations be intelligence led? Or will intelligence continue to be descriptions to fill out the boxes of a predetermined plan? This aside, where it concerns direction, SNA approaches supplemented by TTS approaches provide the best product. The TTS approach alone is not only insufficient, but on its own in a COIN environment, will likely distort the reality for decision-making, as well as the following phases of the intelligence cycle in terms of collection, processing, and dissemination.

The difference between the two approaches in practical terms is most apparent in terms of the collection phase of the intelligence cycle. Within a PMESII understanding, it is logical that the spectrum of information to be collected must expand significantly with respect to the TTS. After taking over a very linear TTS driven AO, I can with great confidence confirm that this is true. However one of the biggest surprises was the actual stress this puts on limited collection resources, and prioritisation of collection. One of the biggest challenges in this regard is the delegation of resources to answering ICP questions. For example, short-term force protection concerns definitely favoured the use of covert resources to search for ground disturbances and IEDS. However longer-term stabilisation objectives required assets to focus on pattern of life of LN, or the narcotics cycle of a local community, or the influential LN. Hard choices when lives are at stake both in the short-term and over the long-term. Furthermore the degree of certainty attached to knowing when you had what you needed for military planning was far greater under the TTS approach to collection. But how does one judge when they have enough information to estimate the level of influence of a particular tribal elder? So in terms of collection, the SNA approach requires more information, and so carries with it a plethora of new analytical and resource management challenges. Identifying these key challenges and dynamics, and working on methods to resolve them could be an area of focus for future research.

Without any doubt the SNA based approach to intelligence processing within an EBAO framework provided a more accurate picture of the battlespace than the TTS approach. It also improved the accuracy of the TTS understanding. This resulted in more effective and synchronised actions, producing more desired effects in all dimensions of PMESII.

Dissemination in a COIN environment is all about the speed at which knowledge can be delivered to the capacity with the authority to act. It in this regard it is fully dependent on social organisation and the exploitation of available technology to insure effectiveness. The TTS approach to dissemination was based on a social organisation that was hierarchal and built originally for optimizing through 'stove-piping' information. This was admittedly, a very effective approach when dealing with conventional situations where

descriptions of fixed positions and numbers of men and material sufficed for planners to achieve the desired kinetic effects. The times have changed, and the TTS structure is not only inefficient for disseminating knowledge, it has in-built characteristics that frustrate the dissemination of intelligence and accelerates its deterioration. It subjects it to too many interpretations reducing precision and context at each filter that it is no longer accurate by the time it reaches the capacity with authority to act. It reduces battle space agility and inhibits self-synchronisation, and by doing so dramatically reduces the effectiveness of the military organisation in a COIN environment. Social network structures are inherently better suited to the full exploitation of information sharing technologies available, and this coupled with a real-time drive ISTAR capability, makes network structures for dissemination the best suited to complex battlespaces, PMESII driven analysis, and the EBAO philosophy.

A final remark, this study is further evidence that network thinking is something more than another way to approach understanding a COIN battlespace. It is also about how we think and organise as a military in the 21st century. After two intelligence tours in AFG, I am convinced that until network thinking is embraced fully in all aspects of military organisation & and culture, we are far less effective than we could be. Despite 20yrs of transition, the 'yoke' of 19th century thinking with regards to MI remains, finding the justification for carrying it into the 21st century is becoming increasingly difficult to find.

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16th ICCRTS
"Collective C2 in Multinational Civil-Military Operations"

Title: Kitae II-Knowledge Development in Battlespace Helmand

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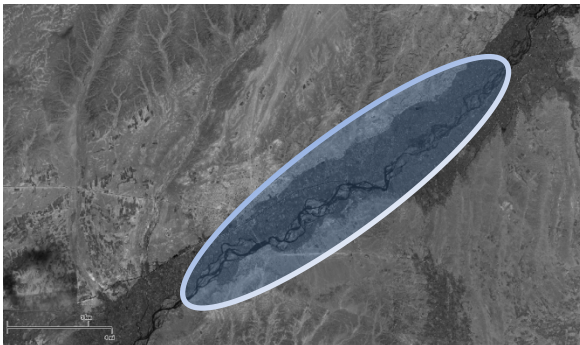Ryvangs Allé 1 | DK-2100 Copenhagen | Denmark | Tel. +45 3915 1240
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1. **RCT & Constructivism**
2. **Identities and Interests**
3. **EBAO Context**
4. **COIN**
5. **Agility**

Aug 2010   Sept 2010   Oct 2010   Nov 2010   Dec 2010   Jan 2011

Participant Observation DABG:INTELL OFFICER ALL-SOURCE/TARGETING/SOF

The Commanders intent for the 6 months was to re-gain CF FoM in order to access the local population for human terrain mapping, and to set the foundation for expanding GIRoA influence.
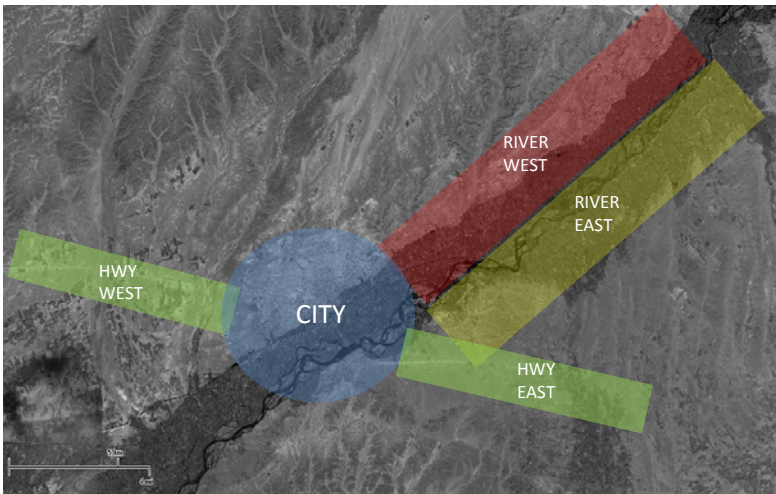
Social Network Analysis (SNA) vs. Traditional Time & Space (TTS)

Fig.1.0 Intelligence Cycle

Direction
Dissemination
Collection
Processing
Traditionel Time & Space Approaches
Social Network Approaches
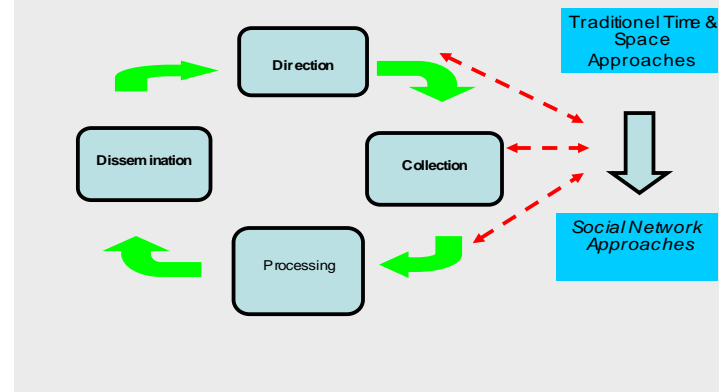
1. DIRECTION
2. COLLECTION
3. PROCESSING
4. DISSEMINATION

Map 1.0 Traditional AO Division

MAP 2.0 Network Approach

Table 1.0 TTS Approach to ICP

What are the names of INS in the AO? What weapons due they carry?
That are the names of INS commanders in he AO?
Do local INS have family in the area?
What is the names of the INS patrol leaders?
How often does the INS patrol in the area?
Who is the mullah for the INS?
Where do the INS come from?
What type of vehicle do the INS drive?
Do any of the INS use a Motorollo? Name?
Which INS does most of the talking at shuras?
What is the name of the INS judge for the AO?
What is the name of the INS who decides how much the LN will be taxed?
Who are are the INS in the area? What are their function?
Where do INS live/BDL in the area?
Where are there INS staging areas in the area?
Are there HME storage facilities or locations in the area?
What are the family names and tribal affiliations of the INS in the area?
Where are there arms caches in the area?
Which INS gives the orders to the other INS?

Table 2.0 SNA Approach ICP Example

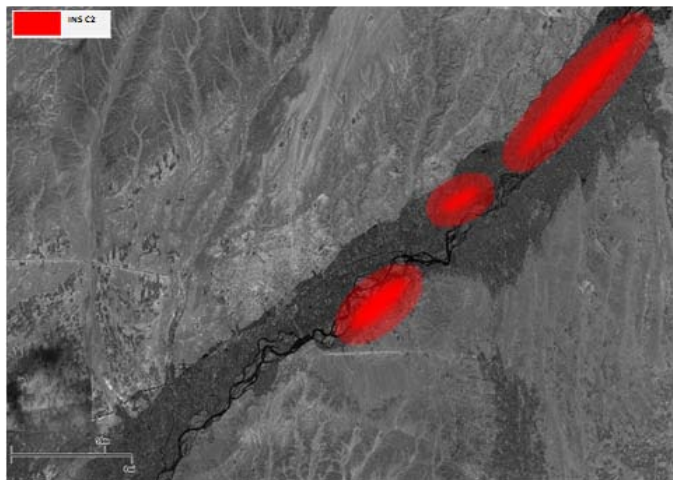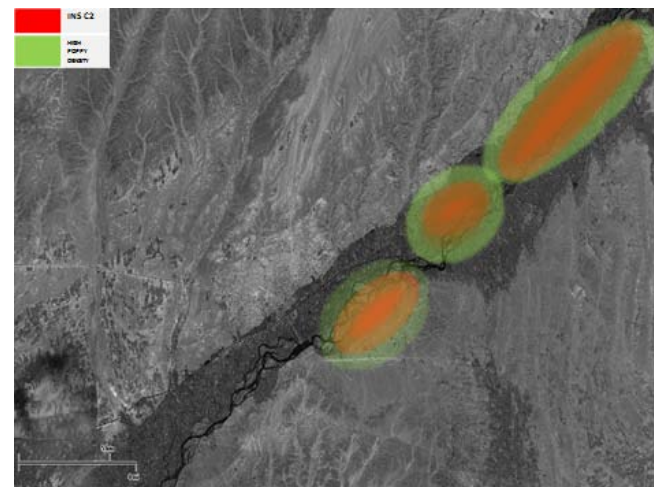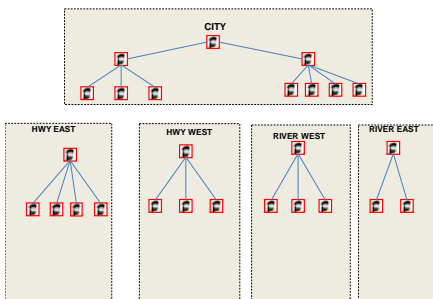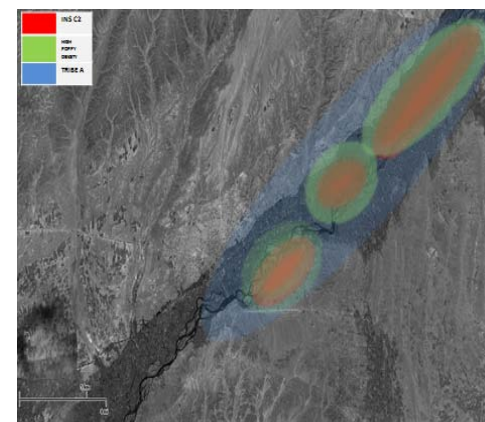| |
|---|
| What are the names of major landowners (Khans), their tribal affiliation, their place of residence, contact info? |
| The names of elders, their tribal affiliation, their place of residence, contact info? |
| The names of mullahs, their tribal affiliation, their place of residence, contact info? |
| The names of doctors, their tribal affiliation, their place of residence, contact info? |
| The names of shop owners, their tribal affiliation, their place of residence, contact info? |
| The names of other major employers, their tribal affiliation, their place of residence? |
| The names of other Maliks, their tribal affiliation, their place of residence? |
| Who owns the compounds? |
| Who buys the produce (who do they sell to and where)? |
| What do they grow on their land? |
| How do they settle local disputes? |
| Do the INS provides shadow governance? |
| How much do INS tax LN? |
| How much do GIRoA/ANP tax? |
| How do LN receive the local/regional/national news? |

Fig. 2.0 TTS C2 Approach

Cartel: **ALPHA Network**

DISSEMINATION

Sources

- HUMINT 1
- SIGINT1
- PATROLS
- OSINT
- BIO
- HUMINT 2
- IMINT 1
- SIGINT 2
- IMINT 2
- REACHBACK
- OTHER…

Military Intelligence

| Force Protection |
| Threat warnings |
| INS Timings of Interest |
| COIs/POIs |
| Bio-Targets A-H |
| Intell Tasks Validation – Single Souce |
| HTM |
| Other… |

Actionable Assets

- Organic Forces
- SOF
- CIMIC
- Psy-Ops
- Other…

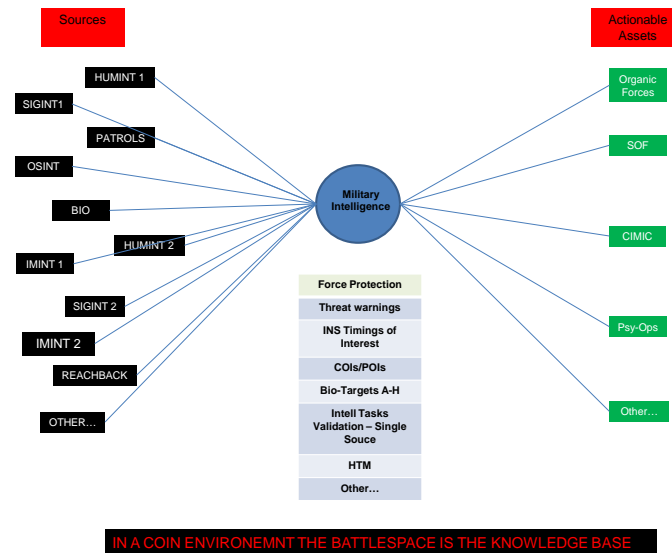IN A COIN ENVIRONEMNT THE BATTLESPACE IS THE KNOWLEDGE BASE
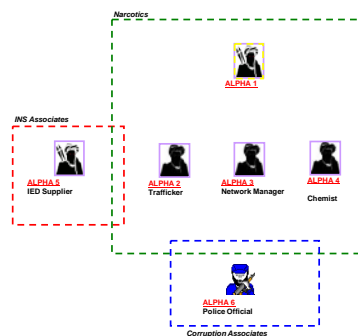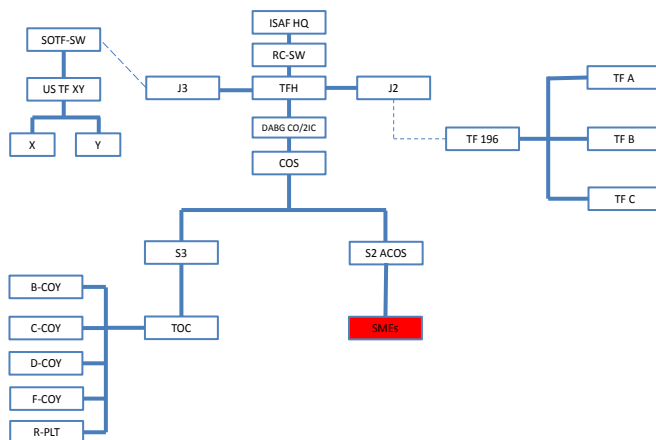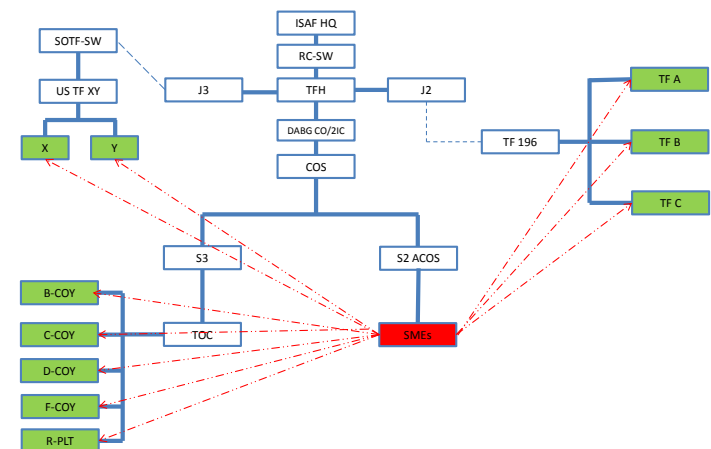
Fig. 6.0 TTS Dissemination Structure

Fig. 7.0 SNA Dissemination Structure

1. Direction in a complex battlesapce is greatly enhanced by SNA approaches to situational awareness development.
2. Exclusive use of TTS approache s in a complex environment undermine enemy FoM situational awareness.
3. Exclusive use of TTS approaches in a complex environment undermine force ratio calculations.
4. Timeliness is everything in a COIN environment.
5. INS have communication/information C2 dominance if permitted to use GSM.
6. TTS alone is unsuited to PMESII and EBAO driven planning procesess.

1. Isolate and identify key principles of ensuring proper direction in a complex battlespace.

2. Taxonomy of SNA techniques and approaches.

3. Isolate and determine effects on approaches of flatlining technologies.

4. Isolate and determine the effects of GSM dominance on timeliness and battles space agility.