Transition from Intelligence Cycle to Intelligence Process "The Network Centric Intelligence in Narrow Seas"

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ABSTRACT

The defence technologies which have been developing and changing rapidly, today make it difficult to be able to foresee the next environment and spectrum of warfare. When said change and development is looked in specific to the naval operations, it can be said that the possible battlefield and scenarios to be developed in the near and middle terms (5–20 years) are more clarified with comparing to other force components. Network Centric Naval Warfare Concept that was developed for the floating, diving and flying fleet platforms which serve away from its own mainland for miles, will keep its significance in the future. Accordingly, Network Centric Intelligence structure completely integrating with the command and control systems will have relatively more importance.

This study will firstly try to figure out the transition from the traditional intelligence cycle that is still used in conventional war to Network Centric Intelligence Production Process. In the last part, the use of this new approach on the base of UAV that is alternative to satellite based command control and data transfer systems in the joint operations in narrow seas will be examined, a model suggestion for the use of operative and strategic UAVs which are assured within the scope of the NATO AGS[2] for this aim will be brought.

Keywords: Network Centric Intelligence, Naval Operations in Narrow Seas, Network Centric Naval Warfare, NATO AGS, UAV.

1. INTRODUCTION

In the current state policies, on which level and how is the National Defence understanding perceived? Following the September 11th attacks, was the bipolar world of the cold war era replaced by a multipolar world? Was the static defence on the country borders replaced with the understanding of the destruction of the threat on their place before they occur after the searches of threats, as the reflection of the new world order?

The political instability situations emerged in the countries recently, the international illegal organizations with different structures and activities, discoveries of new energy resources and the piracy activities focusing on maritime trade routes, and aforementioned questions bring the necessity to revise the National Defence policies. These policies are causing changes in defence strategies, and so, changes in defence Technologies to be planned to assure or develop, as a result.[3]

In the defence technologies where the one is advantageous if ahead a step, it may be the most critical phase to foresee the future battlefield and conditions. The rapidly developing and changing defence technologies, on the other hand, cause the diversification of the threats, so it becomes more difficult to predict the operation designs having the defence purpose against new threats emerging in coming 5–20 years.[4]

However, the most explicit matters on which the scientists working in the field are generally in consensus for the near and middle term are; the expected threats in the operational environment will be diversified; the "hybrid warfare"[5] will

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[2] AGS: Allied Ground Surveillance

[3] Cebrowski, A.K. Admiral USN (Ret), Hughes, Wayne P. Jr., Captain USN (Ret), "Rebalancing the Fleet", For Elective Course in Network Centric Warfare and the Transformation of America's Military, Proceedings, November 1999 issue, 31-34.

[4] Naval Studies Board, National Research Council. (2010). Information Assurance for Network Centric Naval Forces (s.12-15), National Academy Press, Washington, D.C.

[5] Hybrid warfare is a military strategy that blends conventional warfare, irregular warfare and cyber warfare. In addition, hybrid warfare is used to describe attacks by nuclear, biological and chemical weapons, improvised explosive devices and

be dominant with comparing to conventional warfare, and; thus, it is necessary to review the defence procedures and technologies to be developed accordingly.[6]

In the hybrid warfare, the future threats are expected to cause the requirement of detection, recognition and dissemination on real or near real time basis[7], and the requirement is thought that can only be met with the "Network Centric Warfare (NCW) Concept"[8].

In addition to decrease in the number of the platforms and staff and increase in their qualities, transition to unmanned systems and devices, reaching the weapon ranges to the inter-continental level matters, the tendencies for the acceptance of the concept of interoperability became prominent.[9] Besides, it is predicted that the systems which will command and control complex warfare will become more important than now in the future naval operations.[10]

The network centric naval warfare concept for the fleets with floating, diving and flying platforms having missions at overseas and related command and control systems with completely integrated Network Centric Intelligence Structure will have relatively more significance.[11]

Re-shape of the battlefield with the introduction of the network centric structure, re-shape of the intelligence that cannot be separately considered from the warfare means the change in all the procedural functionalities. Then, where and how does the intelligence work in this new structure? Is the new intelligence understanding end for the traditional one? Is that structure and the use of the intelligence in that structure only for the fleets to war at offshore? Is the command and control infrastructure over the satellites necessity for the use of these structures? Is the same concept for Expeditionary Combat appropriate for the naval Coastal Warfare in narrow seas? How should be the structure of the Network Centric Intelligence within the scope of the interoperability of the ISR components which are deployed by NATO in these seas?

This study will seek answers for the questions, but for this aim, firstly, the traditional intelligence cycle and intelligence gathering disciplines, intelligence architecture and interdisciplinary hierarchical building structure, necessity of the transition from the intelligence cycle to intelligence process, reasons and the transition methods will be figured out. The study lastly review the current satellite based Network Centric Intelligence structure of NATO and analyze the AGS components deployed in Sigonella/Italy within the framework of the of the ISR components and suggest alternatives for intelligence dissemination/data collecting methods using no satellite connection.

2. DATA

2.1. Traditional Intelligence Cycle and Gathering Disciplines

Turkish National Intelligence Organization defines the intelligence as "the product that is generated by processing the reports, information and documents compiled from various sources to reach the truth behind the curtain of the events to have prior information on the possible problems to predict the future since the dawn of humanity to today in traditional sense."[12]

The healthy collection of the information to be used for the generation of the intelligence depends on the efficient use of the intelligence collection disciplines. The intelligence activities to be performed, require uninterrupted and continuous flow.

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information warfare. This approach to conflicts, is a potent, complex variation of warfare. Hybrid warfare can be used to describe the flexible and complex dynamics of the battlespace requiring a highly adaptable and resilient response.

[6] The US Joint Chief of Staff, Joint Vision 2020

[7] Hoffman, Frank G, Lt.Col. USMCR (Ret.). "Hybrid Warfare and Challenges", JFQ/issue 52, 1st quarter 2009, 34-39.

[8] This term was firstly used by Vice-Admiral Arthus K. Cebrowski from the US Navy and John J. Garstka in the article "Network Centric Warfare: Its Origin and Future" that was published in Journal of Proceedings in January 1998. The authors considered such requirement as a result of the socio-economical and moral changes in the societies with various military necessities.

[9] Dord,V.D. (2004). Do More With Less, NATO's Nations and Partners for Peace, National Armaments Directors Reports, ProQuest Research Library (s.105).

[10] Naval Studies Board, National Research Council. (2000). Network Centric Naval Forces: A Transition Strategy for Enhancing Operational Capabilities, National Academy Press, Washington, D.C.

[11] Ferris J., (Winter 2003). Intelligence and National Security, Vol.18, No.4 (s.155–174), A New American Way of War? C4ISR, Intelligence and Information Operations in Operation 'Iraqi Freedom': A Provisional Assessment, ISSN 0268-4527 (basılı), Taylor & Francis Ltd.,U.S.

[12] Turkish National Intelligence Organization, "Intelligence Production", http://www.mit.gov.tr/eng/isth-olusum.html, 2014.

This activity, by traditional methods in the USA Joint Intelligence Doctrines, is defined in the Figure 1 where the "Intelligence Cycle" is mentioned with six step phases of "Requirements, Planning and Direction, Collection, Processing and Exploitation, Analysis and Production, Dissemination" where the mission oriented performance is at the center with simultaneous "evaluation" and "feedback".[13]

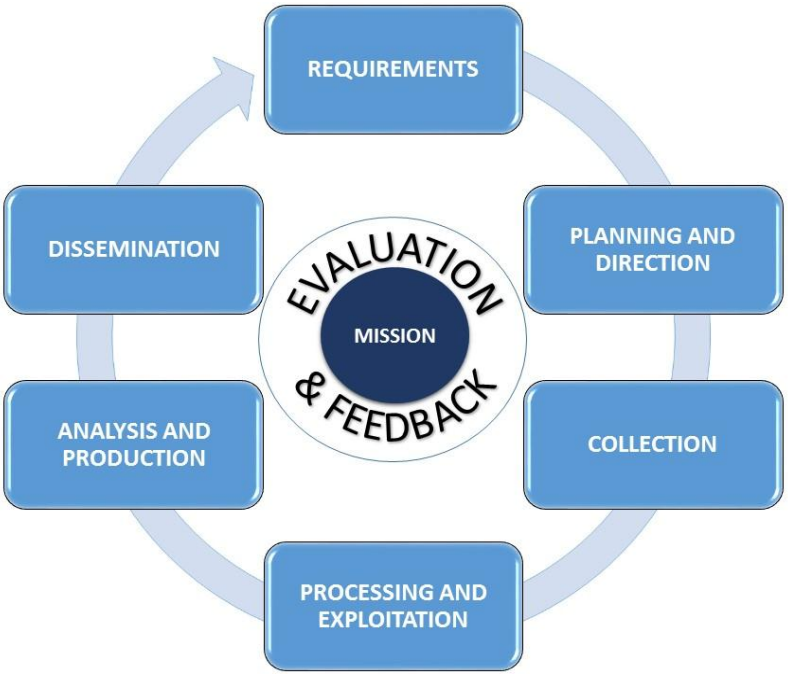

Figure-1: The USA Joint Intelligence Network

NATO uses this network of the USA Joint Intelligence Network in the same manner with it at the mission at the center but it is performed over four steps and there are "evaluation" and "feedback" on each step of the cycle, as it is seen.[14]

Turkish National Intelligence Organization, on the other hand, executes the intelligence cycle on four steps like NATO.

Figure-2: NATO Intelligence Network

[13] Doctrine of Intelligence Support to Joint operations, JP 2-0, 2000.
[14] NATO Intel PfP ADL-WG, 2006.

However, unlike NATO, it follows a methodological approach to integrate other two steps in the USA Network which were excluded by NATO in its own network.[15]

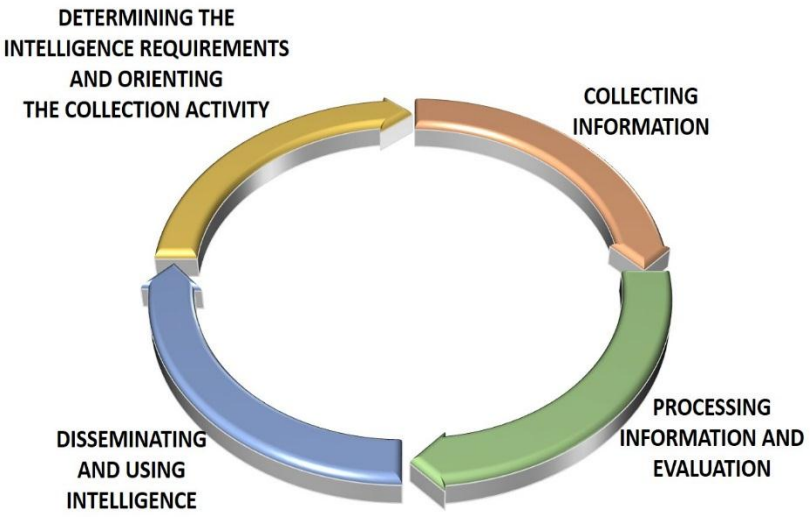

Figure-3: Turkish NIO Intelligence Cycle

There are various intelligence disciplines to be used under the "*collecting tools*" in Traditional Intelligence Network. The intelligence gathering tools are categorized as Human Intelligence (HUMINT), Signal Intelligence (SIGINT), Imagery Intelligence (IMNIT), Measurement and Sign Intelligence, Open Source Intelligence (OSINT)[16]. These disciplines are used in relation and interaction with each other, and this multiple interactions turn into the intelligence.

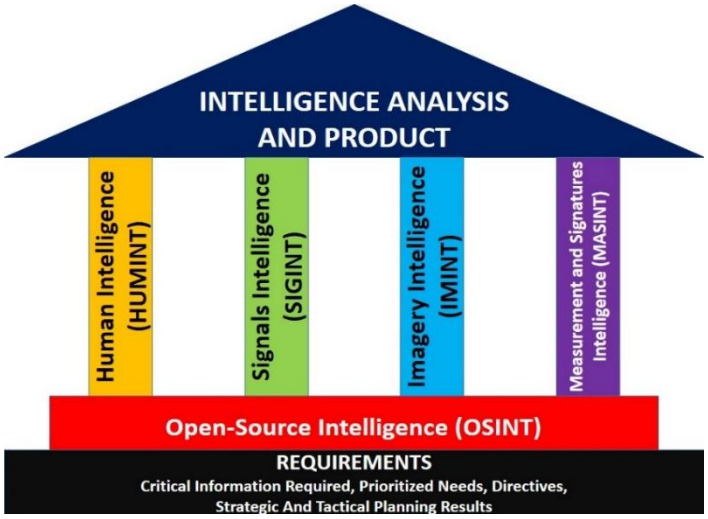

Figure-4: Intelligence Building

The OSINT has more space to be used in interdisciplinary area with comparing to other intelligence disciplines. The OSINT generates the basement of the "*Intelligence Building*" in the Figure 4. All the intelligence disciplines can be fed by the OSINT. While the OSINT can be the starting point on certain times, it can take the form of the intelligence product that we will disseminate.

[15] Turkish National Intelligence Organization.
[16] AJP 2-0 Allied Intelligence, Counterintelligence and Security Doctrine, 2013.

Nonetheless, the intelligence production network and the intelligence building of *human intelligence* in details and relations given above will be definitely required, it is obvious that it will not be able to meet the requirements of the naval operation concept to be present in the future and include some troubles.

2.2. Specific Problems Associated with the Traditional Intelligence Cycle

There are problematic fields in the implementation for all of three organizations which are examined in above examples in their intelligence cycles. Because of the strict hierarchical structure of the cycle, no information or mid-product coming from the intelligence disciplines can enter to the network from the steps, the relations between the intelligence disciplines and steps cannot be reflected. Besides, it cannot be acquired in desired duration and accuracy by using this cycle.

The defined inertia in the intelligence production cycle has caused deeper problems in the management of the intelligence. These can be mainly mentioned with eight titles:[17] [18]

* Restricted information and data storage and access capabilities and constrained in the organizations,
* Non-existence of a unit that can coordinate all the intelligence needs to prevent the repetition,
* Unproductiveness among the coordination of the needs and assignment of the collection tools,
* Security problems on intelligence share in compliance with the principle of need-to-know,
* Dependent access constraints,
* Inability to produce the intelligence at the level that is required by the demanding authority or inability to provide the demanding intelligence on time,
* On account of various restrictions, psychological barriers, fear of compromise independent actions of the intelligence collection and analyze process because of mutual mistrust at some occasions,
* No matter what the intelligence need, being subject to very same process and extension of the process, as a result.

Sharfman claimed in his study in 2002 that the problems in the intelligence production cycle can be removed without leaving the tools in the old structure within a new structure.[19] In the same research, the author states the increasing interoperability of the intelligence disciplines and shortening the intelligence production period along with the changing threat perception.

There are many attempts to remove the weaknesses in said military intelligence production and management and to satisfy the problems. Among them, the most implemented one in the intelligence organizations is the concept of "*Multi-INT*".[20] Together with that concept introducing in the intelligence literature, the space for "All Source Analyst" was defined to control all the intelligence demands and production network and to direct the flows and assignments.[21] Figure 5[22] indicates the place of the fresh mission in the intelligence network.

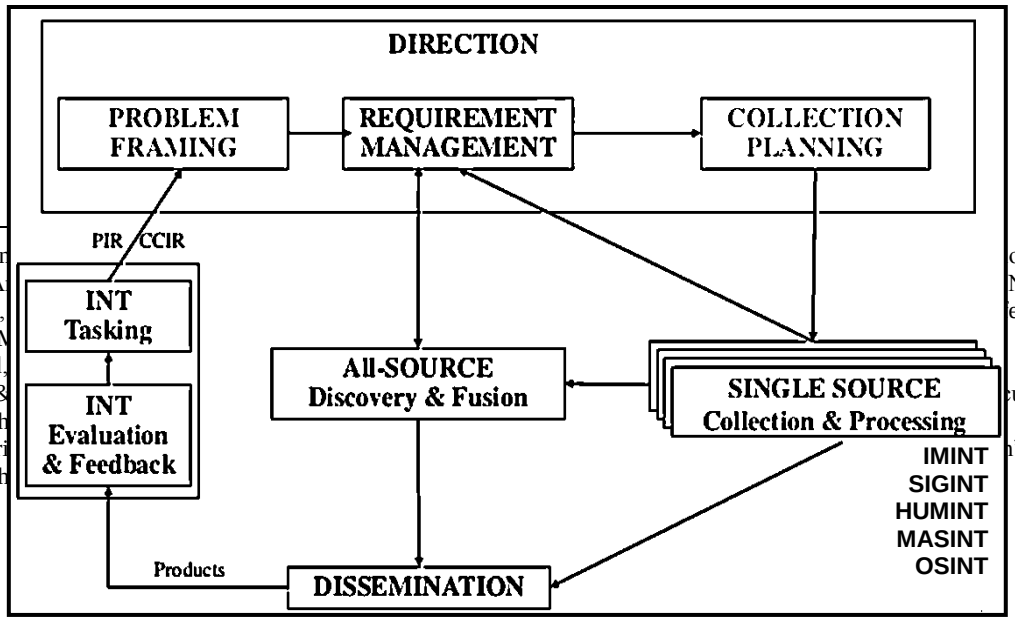

Figure-5: Place of General Intelligence Analyser in the Intelligence Network

[17] Council on ... ons Press, 1996.
[18] Hulnick A. ... No 6, 959-979.
[19] Sharfman, ... ense Community, Mitre Corp M...
[20] O'Connell, ...
[21] Kim, J., & ... curity Intelligence Analysis" Th...
[22] Anissa Fri... ", Defence R&D Canada, 16th...

While this assignment is an appropriate method to meet the possible requirements arising in the conventional operational environment, the increasingly diversified and changing threat environment and faster reaction need provided the formation of the "*Network Centric Intelligence*" that enables real/near-real time information share, rapid intelligence production and management.

2.3. Necessity for Transition to Intelligence Process and Network Centric Intelligence Structure

In the transition method from traditional intelligence production methodology to Network Centric Intelligence structure, some interfaces for the storage of data or intelligence either to be analyze and coordinated by the All-Source Analyst or to be able to store the collected data or intelligence after the classification, were developed, the source and the analyzer are given the access over the secure web lines which are used for military purposes. Figure 6 indicates an intelligence data bank model demonstrating the relations of the main collection tools of the intelligence disciplines and storage point.

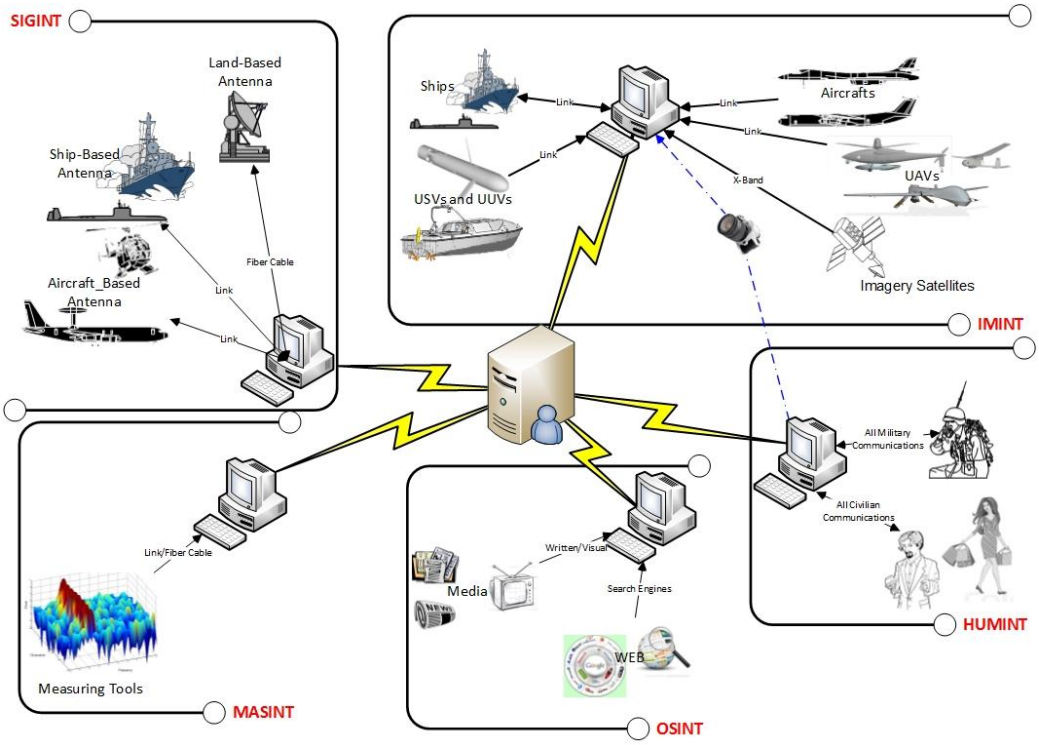

Figure-6: Intelligence Data Bank

However, new mission staff within the scope of current structure and minor changes with the net structure and interfaces to be developed for storage of data and intelligence as the final product did not enable the intelligence to be compatible with changing operational environment.[23] The increasing interoperability and jointness perception among the services with transition to the Network Centric Warfare enabled the Network Centric Intelligence concept to find a room in the literature and military operations.[24]

Sharfman explains why the Network Centric intelligence approach is required with an example of a little intelligence production process.

> "Consider that there are some sensations about the activity of a military facility in a region over imagery intelligence, however no exact information can be reached on its activity.

[23] Ferris, John. "Net Centric Warfare, C4ISR and Information Operations: Towards a Revolution in Military Intelligence?", Intelligence and National Security, Vol.19, No.2, Summer 2004, pp.199 – 225
[24] Sharfman, P. J.

> The current intelligence cycle, on that point, tries to assure information by disseminating the intelligence demand over different intelligence collection tools and analyze the collected information by gathering them. We assume that the demand is directed to human intelligence in the information collection phase.
>
> The human intelligence components directed to the region would report that there are camouflaged command control building and vehicles at the woody area in the facility. In that case, second information introduced to the intelligence cycle is directed to signal intelligence experts in addition to the imagery intelligence.
>
> While the imagery intelligence experts are confirming and defining the coordinates the camouflaged building and vehicles with used technics, the signal intelligence experts can define the type and the goal of the command and control devices and vehicles.
>
> All the information collected by many tools and discipline will be gathered in a single analyst and the intelligence coming from this particular analyst, will be used for detailed reporting by the intelligence organizations or demanding authority."[25]

Sharfman states in this example that despite the coordination of the information collected from different intelligence collection tools over a single channel in the current intelligence production cycle, parallel use of different intelligence disciplines is very low and the hierarchical structure and entrance to the cycle are very strict.

Also, together with the transition to the Network Centric Warfare, he mentions that it is very difficult to manage the intelligence that decision makers in the mainland or operational environment will require in offshore long distances, rapidly changing operational environments with this network. As a result of the examinations he made on the trouble fields, he highlights *seven capabilities which are needed to be acquired during the transition to the Network Centric Intelligence structure*. These are mainly;

(1) Knowledge and Data Capability (KDC),

(2) Multi-INT Fusion Capability (MFC),

(3) Multi-INT Tasking Capability (MTC),

(4) Security Capability,

(5) Community-Wide Communications Capability,

(6) Enterprise Management Capability,

(7) Customer-Focused Knowledge Capability (CFKC).

When we consider the position of said seven capabilities in current implementations, the below points can be determined.

Knowledge and Data Capability; is met with generated intelligence information banks, however, since the real-time or near real-time access and detailed questioning cannot be provided in compliance with need-to-know principle, it is not sufficient for the Network Centric Intelligence structure,

Multi-INT Fusion Capability; it is implemented in the definition of the All-Source Analyst's mission, however it cannot perform an efficient mission at all levels of the network,

Multi-INT Tasking Capability; there are different collection tools to be assigned for any need, however, this task is not performed in a coordinated and simultaneous way,

Security Capability; it is not sufficient for advancing cyber technology and causes a great trouble,

Community-Wide Communication Capabilities; it is not at satisfactory level in the current structure, it is provided in a single band width under the needs with a relative security level,

Enterprise Management and Customer-Focused Knowledge Capabilities; do not coincide with the implementations in current intelligence network.

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[25] Idib.

The trouble fields in the examination and the failures to be removed in the current structure during the transition phase are detailed by Sharfman;

The All-Source Analyst should be included in many phases in the intelligence process in the Network Centric Intelligence structure, unlike the intelligence cycle,

Prior to all, the demands from the user should come to this analyst,

Until the demand of the user is clearly understood, the process should not be started.

After the user demand is clearly understood;

- The coincidence situation with previous intelligences and available data is examined,
- In case it is met with available data, the demander's need is met without starting a process,
- In case the available data is not sufficient, after considering the available data and multiple dimensions of the demand, many intelligence disciplines are directed parallel and in a way they can be communicated with each other,
- The acquired information and the available information are again gathered in All-Source Analyst,
- Communication to the demanding authority and storage in intelligence information bank in a defined systematic way.[26]

It is seen that the intelligence management in the Network Centric Intelligence structure of which the frame is drawn with bold lines, is the most important matter. In addition to the simultaneous revision of the intelligence organization structure with re-shaped naval operational environment, the physical intelligence collection and dissemination phases should be renewed and diversified, as well.

In the current Network Centric Intelligence structure, command-control and data transfer infrastructure are based on satellite and the alternatives are not planned. On that point, especially UAVs are seen as alternative for functioning of the Network Centric Intelligence particularly onshore common operational environment.

3. RESULTS

3.1. Use of UAV Together With/Alternative to Satellite-Based Network Centric Intelligence During Onshore Operations

The emerging need for re-structuring the intelligence and the developed Network Centric Intelligence structure are introduced in details within the scope stated in the previous sections.

Also, as an important requirement of this structure, more dynamic intelligence management is analyzed as it is required to deliver the collected information to the demanders in real or near-real time and transfer of the instant intelligence from the battlefield to the decision makers in a way that they can see the whole picture.[27]

There is another point that should be remembered; in case there is any access interruption of the decision makers to the intelligence this will make the operation command more difficult and in such environment it will be impossible to talk about Network Centric Warfare.[28]

In the models which are developed in that structure, the communication and data transfer are generally integrated to the satellite-based infrastructure where all intelligence cycle, including the assurance and share of the intelligence can be managed over the satellite.

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[26] Idib.

[27] Jeffrey L. Groh, "Network Centric Warfare:Just About Technology?," in The U.S. Army War College Guide to National Security Policy and Strategy, ed. J. Boone Bartholomees, Jr., Carlisle Barracks: U.S. Army War College, June 2007, 380.

[28] U.S. Government Accountability Office, Unmanned Aircraft Systems: DOD Needs to More Effectively Promote Interoperability and Improve Performance Assessments: Report to the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Washington, D.C.:U.S. General Accountability Office December 2005, 2.

Is the satellite only option in such a structure? Isn't it possible to talk about Network Centric Warfare and Intelligence structures for the countries having no capability to manage such operation over satellites? Where is the UAV in that structure? Is the intelligence cycle the only task for UAV?

Furthermore, the question of "whether relatively small naval forces needs Network Centric intelligence structure or no" comes to minds and the best answer is given in the article of Stillman: "*They definitely need*".[29]

To be able to answer these questions, the principles of the Network Centric structure should be figured out. The principles are;

- The forces connecting to a strong network increase in the share of information.
- The information share and cooperation raise the information quality and stiuational awareness.
- The shared situational awareness activates its own coordination.
- As the result of all, a great difference in the achievements is observed.[30]

Particularly, in the field of naval operations, we see the UAV as the alternative to meet and manage in real-time or near real-time for all the aerial matters. The stated use of procedure is relatively more difficult in offshore operations than the onshore operations for which it is very appropriate as a solution.

Milan Vego notes that with comparing to the offshore operations, the command and control may be more difficult in onshore naval operations, since the operation filed is smaller and the operation density is more, the operation course may change in very small time in favor of one party or other. On that point, it is required to develop a concept to provide the exact continuation of the Network Centric Operation.[31]

In the naval battlefield where the rapid and right decision making is prominent for the naval forces performing onshore operations; particularly the joint operation doctrines to be developed for the engagement with the land targets from the offshore platforms, UAV systems are generally used in the Intelligence, Surveillance and Reconnaissance (ISR) activities. In that scope, the UAVs are given the tasks of Recognized Maritime Picture (RMP) generation and maintaining, and the Imagery Intelligence. However, it is seen that these systems are also assigned in various fields.

When these tasks are examined, its usage as a command and control, and communication relay in a network structure supporting way, usage for RMP generation and maintaining, even to select, analyze and manage the targets by providing accurate coordinates can be considered as the favorable aspects of the usage procedures of the UAV for the Network Centric Intelligence.[32]

In the onshore naval battlefield, UAV command controls can be performed in platforms on air or in the sea in addition to the land stations and satellite systems. At the same time, the information share with the agencies responsible for the production of the intelligence and sharing the intelligence with the decision makers can be performed over the same paths.[33]

Among the paths, the land stations are the featured ones. The land stations working on a simple logic, can easily transfer any data easily with a great band width within the "*antenna visibility distance*". Also, the visibility range of the UAVs can be increased by adding the command and control capability the naval and air components which provide the communication between the land station and UAVs.[34]

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[29] Stillman, P. M. Rear Admiral, U.S. Coast Guard. "Small Navies Do Have A Place In Network Centric Warfare" DEBATE & RESPONSE. Naval War College Review, 2004, 57(1), 95-101.

[30] U.S. Department of Defense, Office of Force Transformation, "The Implementation of Network Centric Warfare", Washington, D.C.: U.S. Department of Defense, 5 January 2005, 7.

[31] Milan Vego, "On Naval Warfare", Reprinted from Tidskrift i Sjöväsendet Issue 1, 2010, 83.

[32] Peter J. Dombrowski, Eugene Gholz, Andrew L. Ross, "Military Transformation and the Defense Industry after Next The Defense Industrial Implications of Network Centric Warfare", in The U.S. Naval War College Newport Papers.

[33] Duane T. Carney, Lt.Col, United States Army, "Unmanned Aircraft Systems' Role In Network Centric Warfare", The U.S. Army War College, 2008, 5.

[34] Air, Land, and Sea Application Center, UAS: Multi-Service Tactics, Techniques, and Procedures for the Tactical Employment of Unmanned Aircraft Systems, Langley Air Force Base: Air, Land, and Sea Application Center, 3 August 2006, I-2 to I-3.

As a result, the Network Centric Intelligence Structure can be operated in onshore operations with UAV – land station network usage within the range of the antenna visibility distance as a satellite based alternative. It is especially seen in onshore naval operations of NATO where the interoperability of the systems from different states, the satellite dependent Network Centric Intelligence system process may not be performed.

3.2. Examination of the Model Proposal within the Scope of NATO AGS Project

To be able to examine the aforementioned model proposal within the scope of NATO AGS Project, the latest state of the project should be mentioned firstly.

Following the political agreement on the budget of the Alliance Ground Surveillance Capability in the meeting of the Ministers of Defence dated 03 February 2012, the works for the implementation of the AGS accelerated.[35]

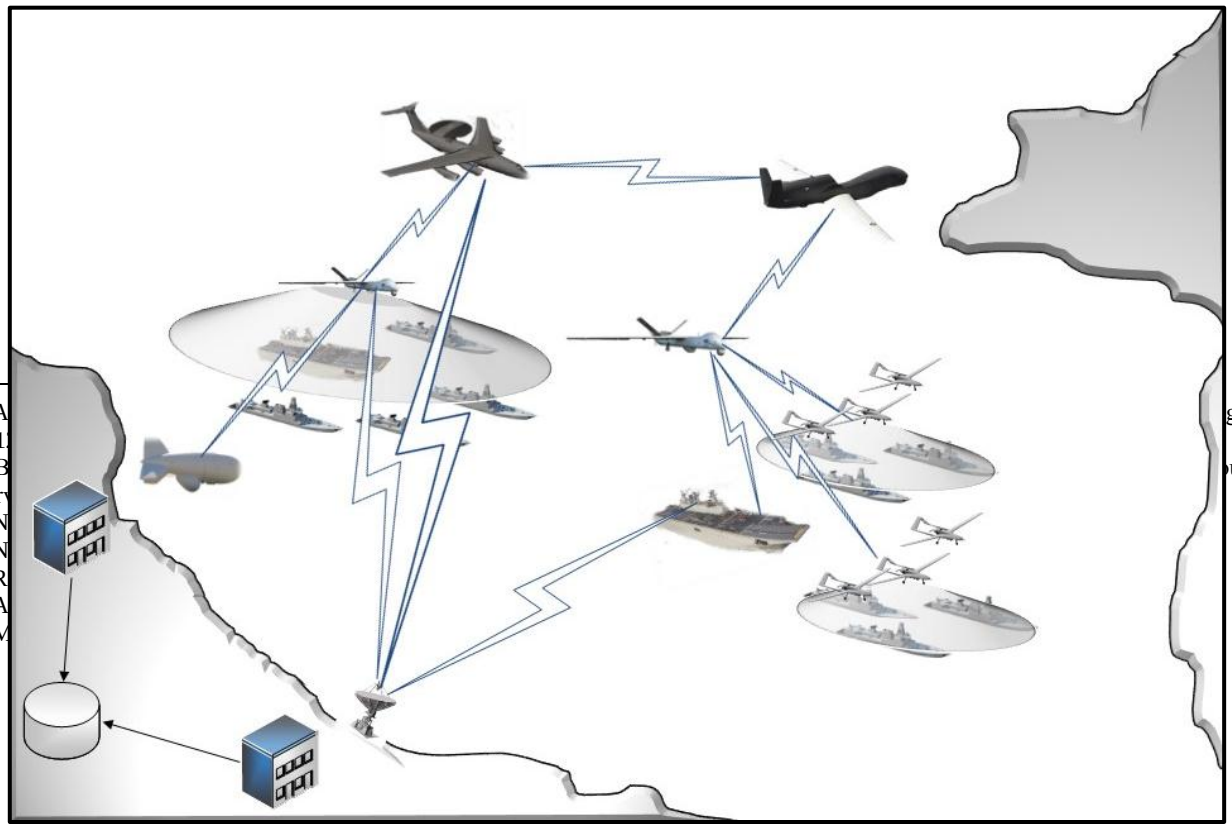
The budget that is required for the establishment of the campus infrastructure and satellite communication in the Main Operating Base – MOB constructing in Sigonella, Italy, was approved.[36] In addition to the Middle Altitude Long Endurance (MALE) Operative UAV, High Altitude Long Endurance-HALE "RQ-4B Global Hawk Block 40" Strategic UAV assurance is programmed in the project.[37]

Great Britain, with SAR (Synthetic Aperture Radar) and MTI (Moving Target Indicator) capable "Manned R1 Sentinel Aircraft; France, with "Heron" type UAV committed to "Contribution in Kind" to AGS.[38] Turkey also has attempts to contribute in kind to the project with its national UVA called "ANKA".

In short, when Mediterranean region where is the deployment area of new construction of which the last state is explained, is considered, it is seen that the onshore operational environment that is also stated in previous sections, is dominant. Again similarly it is seen that during the operations in the region, the time matter is crucial for the share of the intelligence and the existence of NATO member states having shore in Mediterranean is an important advantageous to be able to manage the Network Centric Operation and Intelligence structure.

It is planned that the UAVs to be assured will have command and control possibilities and capabilities with data transfer from land control station, various platforms and satellite.[39] When it is considered that the maximum antenna visibility range for UAVs with the current technology is 300 km, the data transfer in the operations to be held in the region will be performed over satellite capability.

However, it may cause the communication failures which are stated in the previous section. Therefore, it is seen that the communication methods are required to be diversified by taking the alternative data transfer channels into the consideration.[40] Otherwise, in case the single data transfer source cannot be reached because of any reason, the system will not be able to be used, the instant communication will not be able to be performed.[41]



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As a result, it is considered that;

In addition to/instead of the satellite-based Network Centric Intelligence and Operations structure in Mediterranean Sea where has the most appropriate example for the onshore naval operation within the scope of NATO, providing the function of the Network Centric Intelligence structure over UAVs (Figure-7) as an alternative,

Therefore, use of not only the strategic UAVs to be assured in the scope of the AGS Project, but also use of operative UAVs and even the tactical UAVs of the NATO members in the region; and finally,

From this perspective, the proposed model to be developed is compatible with the scope of NATO AGS Project.

4. CONCLUSIONS

Human is the main component of the warfare and the war are won by not the advanced weapons but the human using them. The courage, professional knowledge and skills of any commander at any level have very critical importance for the success. The operational environment that became very complex as a result of the advanced technology and the increase in the number of the environments having political/military instability; the importance of the decision makers who are more knowledgeable, innovative, responsible, proactive and cooperative become more crucial day by day.

On that point, when the necessity for the structure that includes the production of real-time or near real-time intelligence causing rapid and accurate decisions for the decision makers simultaneously with the operational environment and was explained in previous sections, is examined;

One dimension is generated by;

* The desire to intervene to the threat before it emerge, parallel to rapidly developing defence technologies, weapons impacting to the long distance from the main land and changing threat perception,

* In the onshore operation concept; desire to generate at a good level and in a short time with great accuracy and maintain the Recognized Maritime Picture (RMP), effort to gain the capability of multiple engagement with selected land, sea and air components and the attempt to point defence possibility against threats which may come from air to its main land or maritime components;

Figure-7: Use of UAVs in Network Centric Intelligence

In the other dimension, it is detected when the economical aspect is considered, that the desire to have a voice on maritime routes and to oppress the international competitors are the prominent motives.

Both dimensions cause deeper changes in the concepts of the components of all forces where naval force is at first. The centuries long warfare strategies are being replaced by new warfare strategies where the one with qualified information and superior technology is a step ahead.

As a result of these needs, the need for a Network Centric Intelligence structure where the operative and tactical level commanders can have a full knowledge of "whole picture" as much as strategic level decision makers in the Network Centric Operation structure and the intelligence production and share can be performed more accurately and faster, in addition to the solution proposals are examined in a detailed way in this work.

Sun Tzu states in his classical piece, called Art of War, that;

> "If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle."

puts the indispensability of the intelligence for the operation very clearly.

This indispensability is still there, today. The battles are not won with clever maneuvers during the crisis time or declaration of war, but mostly with the intelligence that is assured during the peace and maintained during the warfare. The possibility and capability of surveillance of the enemy components on the base of 7/24 by the time of peace gain the states the awareness and the awareness cause the states to use their armed forces for deterrence instead of actual use.

The intelligence production activities starting at peace time continues in tension or warfare periods. It provides the healthy decisions of decision makers to gain real-time or near real-time access to the intelligence. Such possibility and

capability, on the other hand, can only be realized with the Network Centric Intelligence structure that is to say the re-structure of the intelligence production process in the Network Centric Operation structure.

In that scope; it is obvious that new capabilities and facilities which will be gained by the Network Centric operational environment for naval forces will change the use of the naval intelligence.

As a result, with the Network Centric Intelligence structure that should be generated in Naval Forces;

- The intelligence experts who are not together, even not in the same force will be able to share simultaneously their assessments on the matter they are related,
- Experts will be able to enrich their assessments by accessing to the assessments of other disciplines and past data simultaneously,
- The intelligence that is provided by this method that requires the transition from intelligence cycle to intelligence production process, will be able to be delivered to the demander more accurately and faster with comparing to the older system,
- Finally, the process will provide better decisions of the decision maker in a shorter time, as a requirement of the warfare, and increase the light of the intelligence on the operation for the way towards victory.

On the other hand, the existence of advancing unmanned systems, particularly the unmanned air vehicles for the naval forces of the countries performing onshore operations, is found very important in the Network Centric Naval Intelligence structure. Similarly, for NATO components which will perform operations in these kinds of regions, as it is stated in the AGSS example, it is evaluated as an alternative method to satellite based communication in data transfer possibility and capability with the command and control.

In the scope, particularly in Mediterranean Sea;

- Requirement to increase the interoperability among NATO countries along with the acquired capabilities,
- In the region, the antenna visibility range and coverage fields of the UAVs are possible to increase with land control and data transfer stations in NATO countries participating to AGS Project,
- In that way, operation of the Network Centric Operation and Intelligence structure alternative to satellite based command and control, and data transfer infrastructure can be provided over UAVs,
- Not only the strategic UAVs to be used in said structure, but also operative and even tactic UAVs can be used,
- Following the encouragement of the NATO members in the region to join the AGS, the antenna visibility range and coverage field can be increased,
- Thus, the effectiveness of NATO AGS capability in Mediterranean region can be increased according to the assessment.

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