COUNTER IMPROVISED EXPLOSIVE DEVICES CENTRE OF EXCELLENCE

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Subject: Final report from 4th C-IED COE Lessons Learned Workshop, 02-04 Dec 2014.

1. Introduction

The Counter Improvised Explosive Devices Centre of Excellence (C-IED COE) conducted its fourth C-IED COE Lessons Learned workshop (LL WS) from 02 to 04 December 2014 at the C-IED COE, Hoyo de Manzanares in Spain. The workshop was open for NATO nations, NATO Commands, Partnership for Peace (PfP), ISAF Contributing Nations, EDA and United Nations representatives.

The overarching topic of the workshop was: **"Lessons Learned within C-IED – an operational recap".**

2. Aim

The aim of the workshop was to achieve the following objectives:

- To conduct open discussions on the presented subjects ;
- To develop links with the C-IED COE and its capabilities;
- To facilitate and enhance interaction in the multinational C-IED community;
- To provide an opportunity to share information and to network with the Community of Interest.

3. Main topics

Based on challenges identified and operational deficiencies in the field of C-IED during current operations, the C-IED COE chose the following topics for the workshop:

- The global IED threat and ISAF Lessons Learned,
- Africa and C-IED,
- Follow up on last year's workshops topic "Air contribution to C-IED".

4. Structure

The workshop was divided into two distinctive parts: The first day was dedicated to ISAF and the second and third days focused to C-IED in Africa. The ISAF day consisted of eight briefings, including the "Air contribution to C-IED" brief. These briefings were provided by different nations and agencies. The briefers were selected based on their recent involvement in current military operations or on their expertise on the topic discussed. Each briefing followed a short question and answer (Q&A) period.

The two Africa days consisted of four or five briefings per day provided by different nations and agencies. These briefers were selected based on their recent involvement in and expertise on the topic discussed. Each briefing followed a short question and answer (Q&A) period. Afterwards, the attendees were divided into four syndicates and discussed sub-themes of the main topic. The syndicates were requested to provide a short presentation during the plenary discussion on the findings and possible solutions.

5. Overall findings

5.1. The briefings and discussions in the syndicate groups identified several Observations/Lessons Identifies (Obs/LI). These Obs/LI including a discussion of the Obs/LI and appropriate recommendations are listed in Annex B.

5.2. Besides the two topics listed above this year's workshop provided a follow up on last years "Air contribution to C-IED" topic. The aim of this was to allow further analysis and provide feedback on last year's findings. This was achieved by a briefing about the contents of the white paper by JAPPC. Therefore special attention is drawn to Annex C. All readers of this report are encouraged to study carefully the listed findings and provide comments to JAPPC (current POC: parkinson@japcc.org or contact@japcc.org).

5.3. The following topics dominated the findings from the briefings or from the syndicate work:

- Institutionalization of C-IED has improved but will require continued efforts;
- The need for continued efforts and commitment to the Lessons Learned process;
- The necessity to develop a flexible and scalable training capability for C-IED capability building in Africa;
- The need for a comprehensive approach to C-IED capability building in Africa.

5.3.1. Institutionalization of C-IED has improved but will require continued efforts.

NATO and partner nations have taken huge steps in the institutionalization of C-IED with the development of permanent C-IED branches, the development of the exploitation facilities, training and education packages and the procurement of C-IED equipment. However it will require continued efforts to maintain and improve on the progress made.

5.3.2. The need for continued efforts and commitment to the Lessons Learned process

During the historical brief about the Portuguese LL during their colonial wars it became clear that a lot of the lessons learned from these conflicts were not considered in following operations and especially not in Afghanistan. This briefing underlined the importance of an efficient and effective LL process and fed the doubts about the current status of the C-IED LL database and the LL process within the C-IED discipline at that time.

5.3.3. The necessity to develop a flexible and scalable training capability to build a C-IED capability in Africa

The training solutions used in preparation for Afghanistan are not all suitable for both the C-IED pre-deployment training for missions in Africa and for the training supporting capability C-IED building in Africa. C-IED training in Africa requires small training teams that are able to adjust training to the local circumstances and the host nations needs and possibilities. The uniqueness of every African nation requires high flexibility in training solutions and size.

5.3.4. The need for a comprehensive approach to C-IED capability building in Africa

To successfully develop a C-IED capability within African nations requires more than trained soldiers. Besides the military component other governmental structures like the judicial system need training and education regarding C-IED. This cannot be achieved by the militaries from NATO nations and partner nations alone; it requires a common military and non-military approach and an interagency approach with support from other International organizations and NGO's.

6. Further workshops

The workshop proved to be of great value for the community of interest. The next Lessons Learned workshop will be held at the C-IED COE, Hoyo de Manzanares from 1-3 December 2015.

FOR THE COUNTER IMPROVISED EXPLOSIVE DEVICES CENTRE OF EXCELLENCE

C-IED COE DIRECTOR

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Information:
C-IED COE Sponsoring Nations
LL WS @Participants

ANNEX A to
4th C-IED COE LLWS Report

ANNEX A – Workshop topics and briefers

"Lessons Learned within C-IED – an operational recap"

Topic 1: Global IED threat: update briefings on current hot spots with an emphasis on ISAF Lessons Learned.

After 11 years of military operations in Afghanistan, the ISAF mission has come to an end. During this long period of operations and mentoring of Afghan national security forces (ANSF), ISAF has supported the setup of basic C-IED skills and C-IED structures in a country with almost none of its own capabilities. Even using the highest western standards and technologies it was extremely challenging to achieve the current level of C-IED capabilities within ANSF. Therefore, it is of fundamental importance to collect all our lessons identified and learned, assess them if not done so far and keep and store them for future operational involvement…wherever that involvement will be.
Indeed, IEDs are not limited to Afghanistan and Iraq; they are a global phenomenon. The IED continues to be one of the most accessible weapons available to terrorist and criminal organizations affecting states and their conventional armed forces. A recent JIEDDO report reveals that from August 2012 to August 2013 over 14.500 IED incidents occurred globally. The TOP 10 of countries witnessing IED attacks are located on almost all continents and include Columbia, the United States, Somalia, Syria, Turkey and India. Recent observations stress that the TTPs used in IED attacks will evolve and adapt as the threats' actors "seek to overcome countermeasures". Now IEDs will be part of the threat's arsenal against armed forces regardless of where they are deployed.

Briefers:

Briefer	Topic
LTCL Jose RUFAS (ESP)	JFCBS C-IED LL and the transition to RESOLUTE SUPPORT
CENTRO NACIONAL DE INTELIGENCIA (ESP)	Current threat update
Gp Capt Jeremy PARKINSON (JAPCC)	LL on the institutionalization of air support to C-IED
Capt Abu Akeel (US)	LL update from current ISAF C-IED OPS Officer
Maj Paul Gauthier (CAN)	CAN C-IED LL during ISAF
Mr Neil Scott (UK)	Operational Analysis and Data Sharing
Col Mark Proctor (UK)	Exploitation
Ltcl Charles Giraud (FRA)	CITHARE

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Topic 2: Africa and C-IED

In Africa, two-thirds of IED attacks occurred in Nigeria and Somalia. The rest of the events are spread across the continent in a few countries (Kenya, Libya, Mali, and Algeria). Seven NATO Nations, EU/EDA, USAFRICOM, AMISOM, and multiple civilian and non-governmental organizations are expending extensive resources within East Africa to train and/or educate a large audience on IED familiarization and C-IED Operations. However, it appears that these efforts are not synchronized and that nations are using different approaches in preparations and during deployments. Building partner capacity is a critical component to be successful in the C-IED fight on the African continent. An evaluation and assessment of observations and LI/LL from the different employments will provide valuable findings for future NATO involvements.

The topic was addressed in two main sessions during which the audience was divided into four syndicates.

Part 1: C-IED operational environment

The aim is to brief and update the audience on current status and developments regarding all operational related C-IED subjects in the different operational areas of the continent. This can include:

- Review of C-IED threats, adversary TTPs in Africa
- Concept/approaches to train "host nation" forces
- IED mitigation techniques, equipment and procedures
- IED reporting systems
- IED lexicon, terminology

Briefers:

Briefer	Topic
Capt Danilo Frisoli (ITA) **Capt Cyril Brethes** (FRA)	C-IED LL from EUTM-Somalia
Maj Fernando Barroso (ESP)	LL from Operation EUFOR RCA
Cdr Bas Bruins (NLD)	C-IED LL in MINUSMA (Mali)
Mr John Eklof (US)	AFRICOM country overview C-IED LL on East Africa
Maj Verkoeijen (NLD)	Joint Deployable Exploitation and Analysis Laboratory (JDEAL) project

ANNEX A to
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Part 2: Current status of C-IED training and analysis of gaps and training deficiencies

The aim of this part is to brief and update participants on current and important developments related to C-IED training and to provide a forum for collecting existing C-IED courses/programmes/modules available to NATO and non-NATO partners addressing specific needs of that area. This can include:

- National/organisation approaches and specifics of C-IED training;
- Landscape of C-IED training: courses, seminars, exercise;
- Gap analysis of pre-deployment training based on operational experiences in African missions;
- Best practices in pre-deployment training.

Briefers:

briefer	Topic
Maj Viera Merchan (ESP)	IED threat assessment MONUSCO (Congo)
Cdr Oliver Herion (US)	Cooperation, preparation and pre-deployment training for C-IED training in Africa
Capt Pedro Basto (PRT)	Portuguese colonial wars 1961-1974, findings from 13 years of COIN in Africa regarding CIED
Maj Niklas Tornesjo (SWE)	C-IED LL community of interest

ANNEX B – Observations/Lessons Identified during the workshop.

1. Africa is not Afghanistan

Observation

The effect of the IED is the same, but C-IED in Africa is different.

Discussion

Afghanistan and ISAF has been the main point of focus for many nations and its armed forces for the last decade. This has led to the fact that much of the training, the equipment and the TTP's and doctrines are based on and designed for the specific Afghanistan environment. Africa is not Afghanistan though; the Rules Of Engagement are as different as the equipment used and support received.

Whilst discussing pre-deployment training for Africa, it is important to realise, there is not one Africa. The IED threat and the operational environment show great differences if you look across the continent. Therefore, it is important for pre-deployment training to be country specific. Of course, some part of the pre-deployment training and the training cycle need to have generic parts, which have to be in line with SOP's manuals etc. Nevertheless, part of the pre-deployment training needs to be focussed on the specific operational environment. Units and individuals on all levels need to be familiarized with the specifics of the individual operational area in Africa. If the training is too generic, they will not be prepared for the mission.

The challenge nations are facing with this country specific training is the fact that many nations are lacking experience and knowledge of the operational environment they are deploying to, therefore it is important to share knowledge, Lessons Identified and Lessons Learned between nations and organisations/agencies. Utilization of existing organizations on the ground (Embassies, NGOs, Host Nation Support) to develop situational awareness and specific training requirements are an option to counter this challenge.

In some cases the TTP's and doctrines from Afghanistan (ISAF) are tried to be used in Africa (the "Afghanistan Syndrome"). The experience shared during the workshop is that this in general is not applicable for Africa. Much of the high-tech equipment is not available in Africa and some of the equipment is not usable in Africa. Due to different

ROE's and different flora and fauna (e.g. jungle instead of dessert) this applies for the SOP's and TTP's as well, which renders the Afghanistan TTP's/SOP's unusable on the African continent.

Another factor influencing the usability of the Afghanistan experience is the fact that compared to Afghanistan most nations are deploying smaller units to Africa. Those units are structured based on initial mission analyses with appropriate capabilities needed in theatre and meeting the initial operational and mission requirements. Neither these units nor the accompanying staff structures often not have dedicated minimum C-IED elements and appropriate mimimum C-IED awareness training. In case of a quickly evolving IED threat this deficiencies cannot be compensated on a short notice and is posing an imminent threat for personnel as well as is hampering an appropriate operational reaction and initial counter IED activities. Individual soldier C-IED awareness training as well as a minimum C-IED awareness training for staff personnel is imperative to ensure appropriate reactions on an quickly evolving IED threat. This is even more important if the staff does not have any dedicated C-IED staff element.

Recommendations

- NATO nations need to share information, intelligence and lessons learned/identified. The C-IED community of interest on the NATO Lessons Learned Portal (NLLP) could be used as a platform for this.

- Nations must make sure that the pre-deployment training in detail is in line with the current threat in their future area of operations and with the size of the deploying force. If necessary, TTP's/SOP's need to be adapted prior to deployment to make them effective for the country specific threat.

- Current C-IED equipment has to be assessed whiter or not it is usable on the African continent.

- Establish contact and initiate a dialogue with other military and non-military organisations/agencies within the specific theatre to leverage all resources/knowledge available.

2. There is no "one size fits all" training solution for Africa

Observation

Every African Nation is different and poses unique challenges to the instructors deploying into theatre.

Discussion

Most of the African nations have its own unique culture, climate and geography. This expresses itself in the way training support is perceived and how effective the different training methods are. In general, the African nations have a high illiteracy rate and a lower technical status. The result of this is that, the "Western" way of training is not always the most effective way of training for African host nation security forces. Trainees have problems with understanding the conceptual approach of C-IED and its theory. More practical training methods and low tech training approach achieved better results.

Most of the donor nations keep a focus on a "train the trainers" concept to support the host nation own C-IED capability building. Preferably, literates and if possible English speaking trainees are taught. The same is applicable for training programs of other organisations like NATO and NGO's. This limits the number of persons, which can be trained. Furthermore this selected personnel pool is attending several different training programs, which reduces the multiplication factor and effectiveness transferring the knowledge they gained to train host nation security forces.

The limited size of literates with appropriate English skills required a different training approach. The "Western" approach to C-IED training emphasising the understanding of the IED threat and Attacking the Network has no priority in most in most of the African countries. A more practical approach focussing on Defeat the Device is the preferred cause of action of most of the African Nations. However, this has its limitations largely caused by lack of equipment and education.

In the past, several nations have donated equipment to African nations, but not all of this equipment was interoperable and quickly unusable due to lack of maintenance. The same is applicable for the training provided in the past as it did not meet the expected standards and requirements. This observations hampered the development of further training programs of other nations. As stated by one of the syndicates: "We are building reliance instead of a capability".

Several briefings emphasised that the high technology equipment solutions used by NATO and its partners are hard to sustain in Africa, and even more,if they are offered by sponsoring nations to the African nations. The lack of knowledge, the inability to maintain the equipment and the lack of spare parts combined with interoperability problems and high costs are posing a serious challenge building a C-IED capability within the African nations. To compensate the lack of appropriate detection equipment some African nations are using HUMINT assets to locate IED's. In most cases this approach aims for "Defeat the Device", but not for an "Attack the Network" approach, is often seen as an appropriate solution for the African nation, but must often been seen as an ineffective use or even misuse of a scarce asset.

Recommendations

- Nations/organisations providing training to African nations need to make a detailed and precise Training Need Analysis to ensure that training requirements are precisely defined to meet as best as possible the needs of the supported nation. Training of all levels from the individual up to the leadership must be considered.

- Nations should ensure that all instructors deploying are receiving an up-to-date theatre brief prior to deployment, which considers status of training and equipment delivered.

NATO and its partners should consider developing minimum training standards for African host nation security forces. ATrainP-1- NATO Standards for Training and Education for Peace Support Operations might provide guidance planning such training.

- Upon completion of training a Lessons Learned package for a possible follow up nation should be delivered to the JALLC.

3. Individual organization responses in support to African nations are not enough. Cross agency solutions are required (Holistic approach).

Observations

One of the problems in building a C-IED capability in any African country is the lack of an interagency approach.

Discussion

Building a C-IED capability in individual African nations requires more than trained soldiers. The starting point should be the development of a concept, developed by a team of specialists performing the initial assessment considering all national and other supporting nations agencies from the beginning. Short and/or single training courses addressing single training needs not being part of a conceptual approach are found to be ineffective.

EOD/IEDD teams are generally present or are being trained, but there is a lack of exploitation training as well as of exploitation facilities and no understanding about that processes in the judicial system. For an effective C-IED capability, the host nation needs support in setting up an exploitation chain and the host nation police forces and judicial system requires education and training how to interpret and use the evidence generated by the exploitation process. To ensure that the C-IED training efforts are more effective a better coordination between Nations, International Institutions and NGO's is required. As stated by one of the syndicates: "A comprehensive approach at all levels is needed and this requires Key Leaders involvement". To build a lasting C-IED capability requires a coordinated effort of all nations and organisations from the beginning. This includes a coordinated approach of all levels, the tactical, operational and strategic level through appropriate conceptual and operational planning developing adequate policies and structures. Long-term sustained support will be required in most cases.

Recommendation

Before preparing and delivering C-IED training Nations and International organisations have to develop a support and training concept considering a comprehensive approach with the aim to achieve unity of effort in training and educating of all the agencies and government institutions involved in the C-IED fight.

4. The impact of the African climate and geography on C-IED.

Observation

Huge distances, road conditions and the weather are serious challenges for logistics and maintenance of C-IED operations on the African continent.

Discussion

The logistics in Africa are a challenging task. In general the distances are huge and the road conditions are ranging from average to very poor. These conditions can change quickly due to weather making roads impassable. Air transport is the preferred means of transportation, but as those means are scarce and expensive, it is challenging to get the right people and material at the right location at the right time. This had been experienced by several nations committed in both operations and in training missions.

The impact on C-IED is not only the difficulty to get EOD/IEDD teams to the IED event location but also getting collected material and evidences to available exploitation facilities. This has proven to be a challenge for NATO nations and its partners and it is almost impossible for African nations. Most African nations have a very limited EOD/IEDD capacity, almost no nation has a exploitation capability and it is very difficult to get their teams to the IED events in time to secure a possible device. A result of this is that even if the nation has means to render a device safe, those means are not always used and as a result only a portion of the possible evidence is collected and processed.

Recommendations

- Nation/HQs should ensure that the logistic chain for EOD/IEDD/WIT teams, collected materials and dedicated transportation means are considered during the Operational Planning Process.

- During the Operational Planning Process it should be taken into consideration to plan for a greater usage of spare parts for C-IED equipment. This requires a larger stock of spare parts.

5. Reliability of host nations' security forces trainees concerning the required level of C-IED training .

Observation

Basic soldier skills are often more needed than advanced C-IED skills. During several of the syndicate discussions, it was pointed out and agreed on that one of the main challenges in building a C-IED capability is the fact trying to train soldiers who lack the basic military skills.

Discussion

The needs of the host nation are not always precisely identified and well understood; e.g. the host nation requests C-IED training, but requires basic search training. Often this leads the development of ad hoc training packages, which in the end do not meet the training objective stated in the mission plan.

Every African host nation has different security structures and a varying motivation to counter the IED threat. Some of the nations have an interest building a dedicated C-IED capability, whilst other nations are more focussed on building/expanding their existing general military capacity. During the workshop it became obvious, that the same can be said about the donor nations: Some are focussing on building a lasting capability, whilst other nations are more focussed on increasing existing capacities.

Additional point of concern in this regard is that different nations and organisations are using different terminology and abbreviations. This leads to an increased risk of misunderstanding and a decrease in interoperability.

One of the options discussed is to build a "training toolbox". This toolbox should consist of a set of standard lessons ranging from a basic to an advanced level (i.e.– ensure each trainee can zero and fire weapon, First aid, operate communications, Ground Sign Awareness, etc). The training teams would select an appropriate lesson tailoring it accordingly to meet mission and training need requirements. Experiences have shown, that scalable and sustainable solutions are more effective than templates and static models.

Another option discussed is to invest in a training institution for the African Union; this could be led by the African Union and supported by NATO with appropriate knowhow.

That training institution could increase the capability building capacity for the African continent by delivering train-the-trainer courses. These courses should preferably be delivered by African Union forces and supported by NATO trainers.

Recommendations

- During the Operational Planning Process it is important to ensure that the training needs and requirements of the host nation are understood and clearly defined.
- A C-IED Action Plan applicable for EU and UN mission on the African continent should be developed.
- NATO should create a generic NATO and Non-NATO "C-IED lexicon"
- Training has to be scalable depending on the training audience. This could be achieved by using a "toolbox" concept using training modules best fitting the host nations needs and capabilities.
- Assess the possibility to enable the African Union to deliver training through a shared training institution, African Union led, NATO supported.

6. Institutionalisation of C-IED

Observation

The institutionalisation of C-IED is not achieved.

Discussion

NATO and partners have spent huge efforts on institutionalisation of C-IED. The achievements in the "Prepare the Force" and the "Defeat the Device" pillars are tremendous. Extensive training packages have been developed, a huge amount of funds have been spent for the procurement of detection, disposal, Force Protection and other C-IED equipment. The reduced number of fatalities and the increase of finds and effective disposals during ISAF are a clear indicator for the effectiveness of this measure. The efforts in support of the "Attack the Network" pillar are remarkable; however, this pillar is still a NATO concern. On the strategic level the "Counter IED Action Plan" is reviewing on

a permanent basis C-IED deficiencies and the "C-IED Campaign Plan" is providing guidance for the institutionalisation of C-IED on all levels.

Nations and NATO staffs have established or currently establishing permanent C-IED staff elements. However, too often the internal C-IED staff structure relies on the dedication of individuals. The "understanding" of the "C-IED system" on all levels is still a concern, the term C-IED is still misinterpreted and too often put into the EOD or the Military Engineer "drawer".

Exercise planning and control staffs often have not the required C-IED expertise and thus, not considering C-IED in a proper way whilst developing exercise objectives, the appropriate scenarios and the Mel/Mil "game".

The cooperation between military and non-military actors – and here especially with intelligence services and law enforcement organisations – requires still more emphasis. The understanding about this relationship is increasing on military strategic and political level; however, legality about military and law enforcement cooperation, limitation regarding personnel data exchanges and differences in the conceptual and technical approaches are impeding the discussions.

Recommendation

NATO entities, nations, HQs and partners should continue implementing the measure listed in the C-IED Action Plan and in the C-IED Campaign Plan.

7. Maintain and improve the C-IED LL process

Observation

Lessons from former operations have been forgotten.

Discussion

A historical retrospect to the colonial POR wars in the 60's made it obvious, that several Lessons regarding Force Protection, opponents TTP's, equipment and operational design (e.g . use of InfoOps) have been either NOT learned or forgotten during ISAF operations. The congruence measure individuals, units, nations and commands have "invented" during ISAF in response on a quickly changing operational C-IED tempo compared with

those, our ancestors invented and used in a similar operational environment are showing huge conformities.

Nations are permanently improving tactics, equipment and force structures. This has a diluting influence on ostensibly "older" or "outdated" threats and supports, that "Lessons" will be forgotten and finally need to be "re-learnded".

Our Lessons Learned databases are permanently under review. Older "Lessons" are disappearing and are not available for consideration in a later future.

Recommendation

Review the NATO LL process regarding the permanent availability of "older" lessons and observations.

8. Collaborative working in an international environment

Amongst others the following factors were stated for a successful cooperation in an international operational environment:

- Use of a single universal data base like CIDNE
- Understanding of different national capabilities and standards on all levels,
- Use of common terminology,
- Use of standardised processes
- Use of reliable and suitable connectivity,
- Establishment of a standardised reporting system,
- Maintain access to national data sets for specific areas of interest.

9. Development of host nation C-IED capabilities

During the WS a couple of summarising ISAF "key lessons" were presented. They are listed here without further discussion:

- Development of a national C-IED capability must be applied at an early stage of the campaign,
- Key leader training is essential,
- Implement a Train the Trainer concept,
- Equipment sustainability requires consideration of host nation maintenance standards,
- Sophisticated technology requires higher training skills,
- Establishment of integrated exploitation capabilities is required,
- Use of "Commercial off the shelf" (COTS) equipment is recommended.

ANNEX C to
4th C-IED COE LLWS Report

ANNEX C – THE AIR AND SPACE CONTRIBUTION TO THE C-IED FIGHT

INITIAL DRAFT

This paper is a product of the Joint Air Power Competence Centre. It is produced for NATO HQ, Emerging Security Challenges Division. It does not represent the opinions or policies of NATO and is designed to provide independent analysis of some of the challenges likely facing the NATO C-IED community in terms of attempting to institutionalise lessons learned in Afghanistan.

INSTITUTIONALISING COUNTER-IMPROVISED EXPLOSIVE DEVICE (C-IED) LESSONS LEARNED FROM AFGHANISTAN

SECTION 1 – CONTEXT & BACKGROUND

Introduction

The Joint Air Power Competence Centre (JAPCC) has been contributing to NATO and Partner C-IED efforts for a number of years and as would be expected, early work focussed on the Air and Space Power contribution to C-IED fight. In January 2014, the JAPCC was asked by the Emerging Security Challenges Division (ESCD) to look at what C-IED lessons could be identified from the JAPCC's work and consider how those lessons could not only be learned but institutionalised[1].

Looking at the information that the JAPCC had gathered, it quickly became apparent that it was difficult to focus on the subject from a purely component specific perspective, as few if any issues could be identified as '*just*' Air and Space Power in nature. The majority of challenges raised where truly Joint and in many cases had facets across multiple Lines of Development (LoD)[2]. In addition (*and irrespective of reality*) the perception particularly at the tactical level was often that a significant proportion of C-IED observations were either not being captured or, were being captured incomplete. As a result, this piece of work goes beyond just the Air and Space Power perspective.

Having stated that this work goes beyond Air and Space, it is unrealistic to believe that it is either a complete analysis of Air and Space or indeed Joint C-IED lessons identified. This paper should be considered together with similar work by others to include the Joint Allied Lessons Learned Centre (JALLC) with a view to developing a future Programme of Work (POW)[3] that will in turn drive the evolution of the Alliances C-IED construct in preparation for the next challenge(s).

This paper focus on where there are challenges to be met. It should not be forgotten that in '*institutionalising*' a capability, then the positives also have to be captured and there are likely more positives, given the progress clearly made in countering the IED threat in Afghanistan.

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[1] Institutionalisation refers to the process of embedding something (for example a concept, a particular value or mode of behavior) within an organisation. The term may also be used in a political sense to apply to the creation or organisation of governmental institutions or particular bodies responsible for overseeing or implementing policy.

[2] The concept of Capability Development, Lines of Development is discussed later in this paper.

[3] For amongst others the C-IED Task Force and the C-IED Centre of Excellence (COE).

ANNEX C to
4th C-IED COE LLWS Report

Purpose

The Purpose of this paper is twofold. Firstly, to expose to appropriate audiences and decision makers the key findings of JAPCC work in support of NATO C-IED efforts. In so doing it is hoped to promote debate that will lead eventually to further development of C-IED capability. Secondly, to contribute to the C-IED '*Lessons*' process so that together with other interested parties an '*Action Plan*' can be developed that will ensure that the hard won, C-IED lessons from Afghanistan can be appropriately institutionalised.

Overview

C-IED lessons identified must be learned ***and*** institutionalised. However, this activity should not be at the expense of being prepared for the next threat(s). At the core of the IED problem is the concept of the '*IED Network*'. It has been demonstrated repeatedly by amongst others the Intelligence and Law Enforcement communities that IED networks rarely operate just to facilitate IED attacks and often, a variety of other '*nefarious*'[4] activity is being conducted in conjunction with IED facilitation. It is likely that the IED (nefarious) networks of today, their subsequent evolutions or their replacements will be at the heart of the next set of challenges. Therefore, institutionalising a '*Counter Nefarious Network*' capability should be the objective. To do this we need to think Combined, Joint and Comprehensive in order to build an Alliance network (*or network of networks*) in order to be appropriately positioned to successfully counter the nefarious networks we are likely to face in the future, including IED networks.

Background

This piece of work has its origins in 2009 as a study by the JAPCC of how Air and Space Power could best be used to support the C-IED effort in Afghanistan. Work was initiated following a request for support from Headquarters International Security Assistance Force (HQ ISAF), through Joint Force Command Headquarters, Brunssum (JFCBS). This initial task had three basic constituent phases:

a. Identify how (*the then*) current Air and Space capability was being utilised and determine whether this was optimised?

b. Determine what capability existed outside of the operational theatre that if delivered into theatre, could provide an increase in capability?

c. What emerging technologies if either further rapidly developed or if deployed in their current form, could offer an increase in capability?

As would be expected, a significant proportion of the information gathered was classified and in many cases compartmentalised. This led to difficulty in creating a meaningful output that could be effectively shared (*this is a theme we will return to*). A product that many will be familiar with is the JAPCC White Paper of July 2011 entitled: "The Air and Space Power Contribution to the C-IED Fight in Afghanistan". This paper took some considerable development partly because it was difficult to distil the huge amount of data captured into a meaningful, readable but widely

[4] Typically of an action or activity wicked or criminal.

distributable document. Much of the JAPCCs research exists in the classified domain and remains untapped.

Having delivered as requested, it became increasingly apparent that there was a lack of appetite to allow the JAPCC to disengage from C-IED; indeed, Allied Command Transformation (ACT) in a visit to the JAPCC[5] made it abundantly clear that they would view any such disengagement as a grave mistake. As a result, JAPCC's involvement in C-IED has not only continued but developed, albeit at a pace limited by resources.

The JAPCC has had two main focus areas. Firstly, it has acted as an advocate for the role of Air and Space Power in contributing to the C-IED fight. Secondly, and underpinning much of the thinking behind this paper, the JAPCC has worked to champion the need for a holistic and coherent approach to developing a NATO Joint Force Protection (FP) Capability (of which C-IED is a part).

Methodology

The author of this paper is an airman and specialist FP officer with 28 years' experience across a variety of FP-related national and multinational roles. Operational experience includes Northern Ireland, the Balkans, Iraq and Afghanistan; it is inevitable that this background has shaped at least some of the thinking contained in this work.

A technique used to good effect in the past by the JAPCC, is that in publishing a paper such as this, previously unknown individuals or entities will often respond to the publication both contributing to the debate and expanding the network of interested parties.

The contents of this paper represent the distillation of many hundreds of hours of work by the JAPCC. A number of '*fact finding*' visits have been made to ISAF over a period of years and C-IED capability development workshops have been supported at a variety of headquarters. Additionally, the JAPCC has been a supporter of the activity of both the C-IED Task Force and the C-IED COE and has used these engagements as a vehicle to capture data. The primary method of obtaining data has been through discussion with specialist across the spectrum of ranks either directly involved in or, supporting the C-IED fight; military and civilian, as well as national and Alliance perspectives have been gathered. Industry and academia have been consulted. All information gathered is non-attributable although, content will often point to source.

Whilst this paper represents an '*output*' that brings together a spectrum of challenges, taking this '*output*', combining it with the work of others and then capturing what needs to be institutionalised, how and by whom, forms the next challenge and as such this paper is but a mid-point.

SECTION 2 - THREAT

The IED is not a new weapon. At the time ISAF was expanding there was already significant use of IEDs by insurgents in Iraq[6] and of course there is the much

[5] Major General Lilland on 8 February 2012.
[6] The Centre for Strategic and International Studies reported 1,683 IED incidents in Iraq in October 2005.

discussed an analysed use of IEDs during the so called '*Troubles*' in Northern Ireland. Irrespective of where you look, the history of IEDs can be traced back to at least the 1500s and the use of ships loaded with explosives as weapons.

The IED will undoubtedly remain a weapon of choice for our future adversaries, however, we need to ensure that we balance the development of '*pure*' C-IED capability with the development of our ability to deal with whatever our enemies may choose to replace and/or complement IEDs with.

If we look at the reasons why the International Community would deploy forces in the future it is safe to assume that any deployment will be to a failed or failing state and the operating environment in terms of climate, physical terrain, human terrain and distance from the home base will all pose significant challenges. In the short to medium term it is unlikely that we will become involved in state-on-state conflict. As a result, whilst an adversary may be state sponsored, they are unlikely to be in a position to challenge NATO forces directly. Therefore, we can identify a scenario that sees the Alliance facing a well-motivated, well equipped, capable and intelligent adversary but one that is going to rely on asymmetry in order to stand any chance of '*defeating*' NATO. Any '*defeat*' is unlikely be military rather, a strategic failure because our adversary has caused contributing nations to withdraw their support as a result of public pressure on government - a shattering of Alliance cohesion. This in turn, is likely to have been caused by adverse media reporting of incidents of apparently successful attacks.

"*Analysis of future threats points out that in addition to the threat posed to deployed forces, lines of communication and logistics by more traditional opposing forces, including Special Forces, an asymmetric threat exists that includes terrorists and insurgents*[7]".

A crucial aspect when considering threat is to acknowledge that '*threat*' will change over time. Even if the threat is '*negligible*' at the start of an operation, the '*World Order*' is such that the presence of NATO forces will likely attract a threat in a relatively short time[8]. Put simply, forces need to be agile and capable of reacting quickly in response to new threats. Whilst history demonstrates that we never correctly identify the '*next*' threat until it is almost upon us, an educated guess can be made as to some potential regions of possible involvement. Furthermore, we can deduce that there is an increasing likelihood that a future '*enemy*' will have identified that a way to have strategic impact on the Alliance is by attacking the home base. An '*institutionalised*' C-IED capability is one that accounts for this highly likely, future reality.

Of interest, if one looks at the spread of Islamic State (IS), it will be noted that they have spread along lines of communication and into populated areas. If we link the IS phenomena with the ISAF experience, it is probably correct to state that the battlefield of the future is not so much about geographical space but more about '*cognitive*[9] *space*'. The question thus becomes how does our understanding of the C-IED Fight need to adapt to work in this space both on deployed operations and

[7] Second Sentence, Paragraph 17, Second Draft of Military Committee Policy on Force Protection for NATO-Led Operations (MC-0610), dated 27 Jun 12.
[8] Measurable in weeks rather than months.
[9] Cognitive: of, relating to, or involving conscious mental activities (such as thinking, understanding, learning, and remembering).

closer to home? The discussion on 'Culture' below attempts to at least partially answer this conundrum.

SECTION 3 - APPROACH

The Joint Approach

This paper was initiated as an Air and Space Power initiative however, in conducting supporting research it quickly became clear that whether by accident or design, many actors were discussing C-IED as very much a Joint activity. As a result, whilst it *might* have been possible to '*just*' capture Air and Space Power lessons, this was considered to be an inappropriate approach and so, this work has evolved into very much a Joint view of the challenge. Equally, recent experience has been of operations in a land-locked country where future operations may well see operations in the maritime, littoral or riverine environments. Interestingly (*particularly when considering the early history of IEDs*) the Maritime Component and specifically the COE for Operations in Confined and Shallow Waters is currently exploring how the IED might be employed in their environment of interest and how it may subsequently be countered?

The Combined & Comprehensive Approach

A subject much discussed is the reduction in Defence spending across the Alliance. It is suggested that it is safe to state, whether it is universally accepted or not, that few nations can now operate at anything above '*small scale*' on their own and initiatives such as NATO's Smart Defence and Connected Forces initiatives together with the European Defence Agency (EDA) Pooling and Sharing concept are the reality of the modern defence and security environment. Afghanistan has demonstrated the huge cost of countering the IED threat and certainly for NATO Europe, if we are to continue to maintain a robust C-IED capability, the approach to doing so must be coherent with existing initiatives.

As discussed under the heading of 'Threat' the nature of the future operating environment is such that it is highly that there will be a plethora of Other Government Departments (OGDs) and Non-Governmental Organisations (NGOs) operating in the same space as the military. Military deployments will likely be part of a wider attempt at conflict resolution with the full spectrum of Diplomatic Industrial Military and Economic (DIME) elements in play. It is likely that these other actors will be as concerned as the military about the threat and many already have well developed strategies for operating in high IED-threat environments. If we have to work alongside these other '*actors*', then we should develop our C-IED capability in concert with them, to include integrated training.

Academia brings a particular approach to the solving of complex problems as well as a perspective on history; this '*alternative*' but equally valid approach has contributed the C-IED fight. Equally, by engaging with industry, the military has an understanding of what is deliverable in terms of technology and industry gains an understanding of the requirement. All too often, industry has provided technology that has failed to deliver as advertised in the field and much has been spent on developing '*niche*' technology that is simply unaffordable.

Is this Challenge C-IED Specific?

A number if not all of the different communities of interest across NATO are having discussions about how to capture the lessons identified during recent operations in order to ensure that we address current problems, do not repeat the mistakes of the past and are prepared for the future. With the ability of the JAPCC to travel and engage extensively, it is apparent that there are many challenges that are being discussed in the C-IED community, that are common across many other specialist communities of interest. Indeed, the question has to be raised, is there a need for a thorough review of the way the Alliance conducts its business - do existing staff structures meet the current need? Alternatively, is the extensive use of IEDs just a '*symptom*' of the broader changing face of conflict and the challenge that this presents to conventional military forces?

Build a Network to Break a Network

What was clear from the outset was that in simply travelling and discussing the subject of C-IED, the JAPCC was having an effect. Having the ability to travel without limitations around the operational theatre, the JAPCC was able to gather information from multiple sources. It soon became apparent that whilst there were clear themes running throughout, there was no single approach to C-IED. Equally, no one location had what the JAPCC or the location itself considered an ideal solution. Rather, by having described to them multiple approaches, the JAPCC team, was able to extract, in the vast majority of cases at least one, often more, novel or innovative concepts that provided that location with an edge. By travelling through multiple locations, the JAPCC was able to act as a conduit for the sharing of these concepts and in doing so was adding to the overall capability base. The questions that subsequently developed out of this effect were as follows:

a. How do you ensure that the '*corporate knowledge*' of one troop rotation is effectively passed to subsequent rotations?

b. What mechanisms are required to ensure knowledge developed in one area of a theatre is effectively passed to all others?

Out of this came the phrase: "To defeat a network, you need to build a network". This concept of building 'friendly' networks in order to defeat the adversaries networks, is perhaps the headline '*finding*' of this work?

To develop this concept further, if at the heart of the IED threat is the network, and the concept of '*nefarious*' networks is accepted as being at least a significant element of future challenges for the Alliance, then how to '*neutralise*[10]' nefarious challenges becomes the question. Whilst not specifically a solution a mechanism, would be not just a network but a network of networks facilitating the Combined, Joint and Comprehensive approach.

[10] Neutralise: Make (something) ineffective by applying an opposite force or effect.

SECTION 4 – CHALLENGES
(The What & Why)

Networks are the Challenge?

The author of this work has been exposed over a number of years to a multitude of national perspectives at all levels and from numerous entities to include military components (*including coast guard*), civilian entities such as police, border forces customs personnel and what can best be collectively described as national security agencies. What is quite clear from this exposure is that at the heart of the IED threat is the concept of the IED network[11]. Most importantly, these networks are not constrained by international borders; they are truly transnational.

It is accepted that the Alliance is ultimately a political entity and Alliance and Partner Nation military activity will be bound by politics, law (both domestic and international), conventions and morals. However, on numerous occasions when discussing C-IED and specifically '*Attack the Network*' (AtN), the issue arose of the '*political limiting*' of the Joint Operational Area (JOA). If our adversaries and/or those who are providing their means of support have safe havens that they can operate from with impunity, then it will be difficult to break a network.

The basic construct of most '*nefarious*' networks is that the further up the structure you ascend, the more stable the structure and the further from any '*criminal activity*' a member of the network is. However, it is these individuals who very often exert real power an influence; this is often done by manipulating the supply of resources, most frequently finance. Further, even if a source of IED material is denied, if sufficient funds exist, a new source can be obtained. An often used phrase has been: "*Follow the finance, understand the network*". The ability of our opponents to finance any military and political ambitions is crucial however; it would appear difficult for the Alliance, as an alliance, to target the financing of networks because the real power and influence sits outside of the designated JOA. As we look to '*institutionalise*' C-IED but with a view to being ready for the next threat, the question should be asked, should the C-IED Task Force evolve into a '*Counter Nefarious Networks*' Task Force with C-IED as a part (Panel)?

The Force Protection/C-IED Relationship

As what can best be described as a '*career FP officer*', the author of this paper is firmly of the opinion that C-IED is an element or sub-set of the broader concept of FP. The importance of FP for NATO-led forces is reflected in Military Committee (MC) 400/3, *Military Committee Guidance for the Military Implementation of Alliance Strategy*, as a main capability area. FP is defined as:

> "*Measures and means to minimize the vulnerability of personnel, facilities, equipment, materiel, operations and activities from threats and hazards in order to preserve freedom of action and operational effectiveness thereby contributing to mission success*[12]".

Whilst C-IED is defined as:

[11] See also discussion on the concept of '*Nefarious Networks*'.
[12] AJP-3.14, *Allied Joint Doctrine for Force Protection.*

"*The collective efforts at all levels to defeat the improvised explosive device system through attack the networks, defeat the device and prepare the force. Note: Networks describe interconnected people or things, and can be identified, isolated and attacked*[13]".

The purpose of providing these definitions is to highlight the point that FP seeks to "*...preserve freedom of action and operational effectiveness thereby contributing to mission success*", therefore the 'Mission' is the focus of FP, whereas with C-IED, the focus is "*...collective efforts at all levels to defeat the improvised explosive device system...*" i.e. the IED system is the focus and there is (currently) no defined linkage between C-IED activity and any broader '*supported*' mission.

The reason for making this distinction is to raise a concern from outside of the C-IED community that C-IED has been the focus of significant attention and resource and there is the perspective within other '*capability areas*' that this '*investment*' has been disproportionate and driven by a political imperative motivated by media pressure ? The substantive challenge is to ensure that the next threat does not catch us unawares as some argue the IED threat did.

It is a perception that an entire '*industry*' has developed around countering the IED threat and that there are now '*vested interests*' that seek to perpetuate C-IED as a specialist capability area[14]. It is understood and accepted why the Alliance developed the C-IED approach that it did because of the imperative at that time. However, as we strive to '*institutionalise*' the capability, part of the process should also be to take the lessons from a single capability area and spread them where appropriate across many. Institutionalising C-IED capability is absolutely essential but, it must not be at the expense of ignoring other potential (emerging) threats.

Developing Added Value at the Operational Level

As stated, the JAPCC has supported a number of Capability Development events. It has also supported the development and running of the C-IED COE, C-IED Staff Officers' Awareness Course (SOAC). A common observation coming from this activity was the issue of how to create a Joint Staff Officer that could operate away from the tactical yet do activity that could add value to the C-IED fight? The specifics of the observation were that many staffs had considerable experience at the tactical level but came straight from the point of delivery of effect, into the staff environment. This resulted in a cadre of personnel who were struggling to do anything other than approach the challenge at the tactical or sub-tactical level and ultimately the answer became focussed on '*Defeat the Device*'. Although C-IED courses for staff officers do exist, are they sufficiently robust and are they being appropriately supported in terms of providing sufficient training resource? Also, are the personnel who should be attending these courses actually doing so?

Defeat the Device (DtD) but.....

In discussing AtN with those responsible for attempting to provide the material to allow this to happen, three *perceived* failings at the tactical level formed a substantial part of the discourse; all are linked. Firstly, material from devices was either simply not being collected or where it was, it was being handled in a manner that rendered it

[13] AJP-3.15, *Allied Joint Doctrine for Countering-Improvised Explosive Devices.*
[14] It is not unreasonable to assert that other '*capability areas*' view C-IED with an element of envy.

forensically useless. The second was that there was a prevalent view that all too often the simplest course of action of '*blowing in place*' was the preferred course of action; again limiting the supply of material to support AtN activity. Finally, an observation from JAPCC remains that all too often material that is being moved for further exploitation is not moving at a pace that allows exploitation to take place in a timescale that matches the ability of the force to detain suspects.

Exploitation processes have to support the force both in terms of its ability to further degrade nefarious networks but also support the Judicial System and the Rule of Law. The ultimate objective in conducting '*Counter-Nefarious Network*' activity should be the rendering of a network ineffective through the prosecution and subsequent detention of its members through the application of due legal process[15].

Biometrics

Linked to the issue of forensic awareness is the use of Biometrics. Biometrics is an essential tool in the fight against '*nefarious*' actors that when used correctly will at worst limit their freedom of movement and at best bring about their prosecution[16]. The Alliance should continue to pursue the development of a robust strategy for the effective use of Biometrics as a key tool in neutralising nefarious networks through the identification and subsequent targeting of the members of such networks. JAPCC work indicates that there is a general lack of understanding of the use of 'Biometrics' and particularly the storage of data, as a result more education is required in order to overcome obstacles preventing development of a more robust capability.

Bigger Vehicles Bigger Bombs

Put simply, the bigger more heavily armoured our vehicles, the bigger the IED our adversary will build; armour will always eventually be overmatched. It absolutely does not follow that as a result of being bigger, a device becomes easier to detect, especially if forces are enclosed in large armoured vehicles with little awareness of their surroundings. A balance needs to be struck between protection, adequate situational awareness and if appropriate, an ability to engage with the civilian population. Caveats that force personnel to operate in armoured vehicles that alienate them from the population and cause damage to property run counter to an effective C-IED strategy.

A similar argument applies to the provision of Personal Protective Equipment (PPE) or '*Body Armour*[17]' as well as to what other mission essential equipment personnel carry when on foot. As much a part of a sound C-IED strategy is not encumbering personnel with a weight of equipment that causes them to loose focus on their surroundings and as a result, miss otherwise obvious combat indicators pointing to the presence of an IED threat[18].

Campaign Continuity (*or the lack of*)

An often repeated observation was that many argued that there was a lack of '*Campaign Continuity*'. This was further compounded by the size of the operational

[15] See also 'Culture' and discussion of the targeting of those emplacing devices.
[16] Either in the context of the due process of law or as a military target.
[17] To include helmets, eye protection, etc.
[18] Link also to discussion of 'Strategic Communications'.

area, the number of nations involved and the incessant pace of troop rotations. Each troop rotation or change of staff in headquarters brought their own approach. Those serving on longer deployments expressed frustration at the numbers of changes during their tour. It was acknowledged absolutely that there had to be evolution, particularly in response to changes in enemy tactics but, often change was not even recognised as change and so was happening unintentionally and without any understanding of the effects of that change for the force, the civilian population or indeed on the adversary. The question becomes are there structures and/or process that can be put in place to better ensure '*Campaign Continuity*'? There needs to be a C-IED Campaign Plan that all agree upon and adhere to. A vital element of this plan, if appropriate to the operation, should be the early start to developing Host Nation (HN) C-IED capability if the development of such is part of any Alliances '*Exit Strategy*'.

The Role of Culture

We only need look at where the Alliance has been involved since the early 1990s and then look to where there is unrest today to know that future operations are highly likely to take place amongst cultures that could, in reality, be described as '*alien*' to our own. Equally, due consideration needs to be given to the variety of cultures present in the Alliance itself and expanded further if discussing NATO-Led operations.

Kroeber and Kluckhohn in their 1952 work *'Culture: A Critical Review of Concepts and Definitions'*, compiled a list of more than 100 definitions of '*culture*'. For the purposes of this paper the author defines culture as:

"Culture is a shared, learned, symbolic system of values, beliefs and attitudes that shapes and influences perceptions and behaviour. It is an abstract '*mental blueprint*' or '*mental code*'. Culture must be studied indirectly by studying behaviour, customs, material culture (tools and technology), language etc."

Clearly a discourse on the role of '*Culture in Conflict*' is a substantial paper in its own right. However, in the context of C-IED, we need to far better understand the culture(s) we are operating in the midst of and attempt to see any and all of our activity from the perspective of that culture. Having had the opportunity to discuss IED events with Local Nationals, it was fascinating to compare what they knew or perceived of an incident and how that compared to our own position. Examples were given of how a particular incident dating back many months if not years had ultimately led to a village '*allowing*' the insurgents to emplace devices targeting ISAF forces. Examples provided included the targeting of children or those with learning difficulties who, unbeknown to their relatives at the time, had been paid a few dollars only a few moments before they were struck to emplace an IED[19]. What has been made clear is that whilst many IED incidents can be classed in the context of ISAF as enemy action against ISAF forces, there are still a considerable number of incidents that are a result of other more complex cultural responses to our presence. Whilst the local population might not be guilty through commission, they are guilty by omission because as they permitted insurgent activity because they wanted '*revenge*' for perceived wrong doing because that is simply what happens in their culture.

The other aspect of culture to consider is our own military culture. Not specific to C-IED but nevertheless vital to the development of C-IED capability is the appropriate

[19] See also discussions of use of the due process of law.

encouragement of a culture of openness and honesty. Where personnel have made mistakes, they should be encouraged to discuss them without fear of sanction so that others may learn.

Communication and Knowledge Management

Elsewhere in this paper the effect that the JAPCC had as it moved between locations has been described. In its simplest form the small JAPCC team became a vehicle for the passage of information and/or observations. The mechanism was simple. As, in an attempt to confirm and/or develop concepts from one location, similar discussions were repeated at subsequent destinations. The general pattern was that at each location an item(s) would be seized upon as being new, novel, different or even '*wrong*'. The ensuing discussion and exchange of contacts was repeatedly commented on as being extremely useful and ultimately led to the development of the concept of "*to defeat a network, you have to create a network*".

A critical factor to note from these types of exchanges was that it was acknowledged from the outset that because of the size and nature of the operational theatre, a particular approach in one region was not necessarily going to work in another. There were clear and necessary differences but these further add to the complexity of capturing the right lessons.

Linking what is described above to the challenge of '*Campaign Continuity*' there appears to be 3 particular requirements:

a. There is a need for effective communication and the sharing of ideas. Personnel in C-IED positions in theatre are not in post for sufficient time to allow them to establish, share and record not just Situational Awareness (SA) but actual Situational Understanding; they are focussed on *their* task, at *their* level, for *their* tour.

b. There has been a huge amount of data produced but can it now been effectively centralised and subsequently analysed?

c. The classification of information and hence the ability to share remains a challenge.

The question now becomes how to satisfy these requirements? As with many challenges the underlying issue is availability of resources. The JAPCC's activity would seem to indicate that there is a need for a team to be continually moving round a theatre of operation capturing recording and subsequently sharing information; a second team would be required out of theatre to conduct further analysis and information captured needs to be placed on a central database. As has been argued elsewhere, these challenges are likely not unique to C-IED so, is it a step too far to consider whether it is time for the creation of a '*NATO Knowledge Management Agency*'?

The C-IED COE is the C-IED Lessons Learned Database Manager, however, what resources do they posses to not only actively capture data but, analyse any data received in order to develop proper lessons that feed the 'Capability Development' process? Any robust capability requires the ability to proactively seek information and not simply rely on others passing information. Equally, as the JAPCC experience demonstrates, it is the case that those seeking data are often the catalyst for the identification, isolation or creation of an observation.

The issue of ability share information will remain a challenge. However, something that has been detected in the JAPCC's work is that often personnel do not know why information has been classified in the way that it has; what is it about a piece of information that means it cannot be released? If this question can be answered and what makes the information non-releasable can be removed, without significantly degrading its usefulness, then this may be a way around at least part of this problem. A particular example is the presence on an image of metadata; remove the metadata and the image becomes releasable.

Strategic Communication

One Centre of Gravity if not '*the*' Centre of Gravity for the Alliance is the concept of '*Alliance Cohesion*'. The point has been raised of the effect of the media on government strategy when it comes to the provision of equipment. Our adversaries are becoming increasingly adept at using the media as a tool to their own ends. There exist already numerous examples of where either our adversary has filmed his own attacks for broadcast by means of the internet or, has ensured that a '*news hungry*' media outlet has been conveniently present at the scene of an attack. In each case, the narrative has been set by our adversary. In many of the areas where we will operate in future, the cultural dimension of communication has to be considered. Irrespective of the facts it is often the case that '*perception is truth*' and whoever speaks first, is often viewed as the one telling the truth. As a result, whatever '*story*' is told, it is often subsequently difficult to counter. It is suggested that we need to have a more responsive communications capability and one that is able to convey the correct message across a spectrum of cultures and perspectives.

Capability Development

An often voiced concern was that attempts to deliver enhanced capability often brought further challenges. Rapid developments in response to an emerging threat are required but, what appear to have not been in place are robust linkages between research and development, manufacturer and the end user? Further, capability was delivered in what some described as either a "*hasty*" or "*ill-conceived*" manner.

The concept of capability being developed along LoD is a concept that has now gained considerable traction in NATO and the Capability Development LoD[20] are often quoted. Where attempts to deliver capability enhancements have faltered, it has frequently because all lines of development were not sufficiently considered. Put simply, the Capability Development process and the use of LoD has been proven to work and prevent omissions and oversights so it should be rigorously applied.

A comment made by a few but thought worthy of mention here is that in a continuing resource constrained environment, Capability Development in the short to mid-term is likely to be in the conceptual or intellectual domain. It is not about new capability, it is about utilising what we currently have to better affect or, through novel use of existing technologies. This extends to using technologies that were designed for uses other than C-IED, in the C-IED fight if they can be shown to offer an appropriate enhancement in capability.

[20] Doctrine, Organisation, Training, Materiel, Leadership, Personnel, Facilities, Interoperability.

Risk Management

The purpose of raising the issue of RM in this paper is that in the context of Alliance C-IED operations, discussion would indicate that well-understood, national constructs do not work. The issue of a commanders' unease with being expected to tolerate what they perceived was an unacceptable level of risk was raised regularly. However, the ability of the commander to transfer risk was mired in a multinational chain of command. Disagreement would centre on whether it was a NATO or national responsibility to resolve the issue. Put simply, there was evident in-theatre frustration to the out of theatre answer that nothing could be done because the answer lay with the nations. The commander was left with little option but to tolerate a level of risk he felt inappropriate, through an inability to get agreement for a transfer to the next highest level but, without the authority to terminate a task or mission.

Effective Risk Management (RM) should aim to mitigate the IED threat by judicious application of appropriate C-IED measures whilst balancing the weight of C-IED effort against other essential tasks. Completion of a detailed and comprehensive Threat Assessment (TA) allows the issue of risk to be addressed by either avoidance or, through the adoption of possible mitigation methods where it may be possible to reduce the likelihood or significance of an IED event. It is suggested that the Main Effort (ME) for C-IED should be directed wherever possible on proactive C-IED measures (primarily focused on AtN) in order to avoid any adverse effect upon operations and safeguard personnel through pre-emptive action. The weight of effort between proactive and reactive measures needs to be considered. Whilst there are numerous models of RM, when dealing with 'Risk', most models agree that the Commander has 4 main options:

a. **Treat.** The Commander chooses to take effective and resource efficient steps to reduce or eliminate the risk.

b. **Transfer.** The Commander decides that the risk is too great and transfers the risk to the next higher level of command. Agreement to any transfer must be obtained.

c. **Tolerate.** The Commander accepts the risk.

d. **Terminate.** Through the Chain of Command it is decided that the risk is too great and the operation/mission/task is terminated.

Any political or military driven imperative to avoid loss of personnel and equipment at all costs is unrealistic and could have a negative impact on the accomplishment of the overall mission. C-IED itself cannot be considered a viable end-state and the approach to C-IED should always be based on minimising the risk wherever and whenever possible and not on risk elimination. Guidance needs to be provided on acceptable risk levels within the context of the campaign end-state, which will be disseminated down the command chain to allow risk to be managed at the appropriate level. It is essential that commanders are given an assessment of the '*amount*' of residual risk[21] they face and understand the effect their C-IED measures have in mitigating overall risk.

[21] The amount of risk still being carried with all current available C-IED measures in place.

Measures of Effectiveness (MoE)

Another point of discussion was the uneasiness that some expressed feeling over the level of resource that was being expended with no real ability to understand what was being effective and why. As part of any drive to '*institutionalise*' C-IED as a capability, there needs to be an analysis of what activity was undertaken and in what context in order to try and identify whether there is a reliable way to capture and/or measure the effectiveness of C-IED efforts? This would appear to be an ideal task where the contracting of an external, specialist consultant may prove of value. With the huge resource implications of maintaining an effective C-IED capability, understanding what works and why will become increasingly important. Linked to MoE is the issue of developing effective feedback mechanisms. Again, a regularly raised point, particularly amongst supporting elements, was that they would be unaware of whether their input had ultimately provided added value.

Understanding Effects

The issue of correctly understanding effects is also linked to the issues of 'Campaign Continuity' and 'Culture'. When IED events were re-investigated it was shown that in many cases whilst there were obvious linkages between the event and ISAF activity, there were many other less obvious potential causational factors. Consideration of the issues involved demonstrated that whilst considerable effort had be given to deciding what effect ISAF forces wanted achieve and how best to achieve that effect, less effort had been expended trying to understand second and third order effects and also unintended consequences.

Both now and in the foreseeable future, an ability to identify, track and then at a time, place and by means of our choosing, bring effects to bear on individual elements within a network, the network in its entirety or indeed on a network of networks (or system), brings with it an inherent need to look beyond just desired effects. Effects could be kinetic or non-kinetic or a mixture of both and the target(s) for those effects could be aware or unaware that they are indeed a target(s). Furthermore, if this concept is not already sufficiently complex, there needs to be a thorough understanding of the desired outcomes, possible second or more order effects and potential unintended consequences. A better understanding of how our actions effect others from their perspective, not our own, is required.

The Lessons Learned Process

The author himself does not suppose to describe himself as an expert in the Lessons Process. However, it has become clear in the course of this work that there is a much broader lack of understanding of the process and probably more worryingly, a general lack of '*faith*' in the system. A significant number of personnel interviewed understood the basic concept of learning lessons in order to avoid repeating mistakes but, many were not aware of formal NATO processes. Where processes were discussed in detail they were often unit or national process and there was little understanding of the NATO mechanism. The issue of a lack of faith in systems was expressed as a result of the perception that inputs were made, but there was little if any feedback. Further, a number expressed a view that the NATO Lessons process was cumbersome and required those with the '*observation*' to do much of the analysis to identify the lesson themselves. Clearly this is at least partly an issue of time and resource but, is a more robust JALLC and/or a NATO Knowledge Management Agency required?

Level of Engagement

Of concern to the author is the apparent loss of interest in FP and related issues over the past 12 months. It is clear that both the numbers and rank levels attending meetings, workshops and training events is reducing. If the hard won lessons from Afghanistan are to be '*institutionalised*' C-IED activity needs to remain on the current agenda.

Last But Not Least

Any attempt at '*institutionalising*' a C-IED capability has to have realistic aspirations. Underpinning this has to be the acceptance of two facts that are often overlooked. Firstly, any military operation is inherently dangerous and there will be occasions where inevitably, our adversary will be successful, or simply be lucky; this has got be accepted as a reality. Second, as has been said on numerous occasions: "*You can't fix stupid!*"

This last point is not meant '*tongue in cheek*'. The best way to expand this point to ask: Why personnel would on numerous occasions enter high Remote Controlled (RC) IED threat environments with their countermeasures switched-off? Or: Why did a Company Commander collect IED components, construct his own viable IED and bury it on his own base, without informing anyone and thinking it would provide realistic training?

Finally, a figure quoted on several occasions by different sources was that 70% of activity in ISAF was about self-sustainment – logistics. New approaches to military operations including use of renewable energy sources will lessen the logistics footprint and reduce exposure to IEDs. In October 2005 there were a total of 70 x IED incidents in Afghanistan whilst in Iraq, the total was 1,683[22]. However, by the middle of 2009, IED incidents in Afghanistan had reached similar levels[23] as those of Iraq in 2005. The '*Troop Surge*' in Iraq took place during the period March 2007 to July 2008. In Afghanistan, the surge was between December 2009 and July 2011. In both cases, the mid-point of the surge saw the peak of IED incidents[24].

SECTION 5 – THE WAY AHEAD
(The How)

Summary

This paper has sought to capture and explain numerous Observations and/or Lessons Identified; it is absolutely accepted that despite the best efforts of the author, there are still many more that have yet to be captured. Further, some of what is presented here will, quite correctly, be contradicted by the findings of others. What has been captured here are the views of many but '*challenges*' have only been presented in this paper if they have been expressed on a number of occasions and/or across a number of locations.

The author has tried to capture '*challenges*' not necessarily in the manner they were initially discussed but in a manner that attempts to describe them as something that

[22] Figures from the Centre for Strategic and International Studies.
[23] Figures from Joint IED Defeat Organisation (JIEDDO).
[24] Iraq, May 2009 = 2,482. Afghanistan, May 2010 = 1,128.

can be acted upon in order to achieve the stated purpose of this paper. It is clear that whilst there are numerous individual '*challenges*', many if not all are interlinked and so any attempt to '*institutionalisation*', the C-IED lessons from Afghanistan will need a truly comprehensive approach. Further, whilst it could be argued that most lessons could be '*institutionalised*' as part of the concept of 'Train the Force', this is an over-simplistic approach. Many of the solutions to the '*challenges*' presented cover again a number, if not all, LoD and affect in many cases multiple levels of command.

The final factor to note is that Political and Military '*generations*' are both short (perhaps less than 10-years?). As highlighted above, there is all ready a shift towards future challenges and for some, the challenges of Afghanistan are now seen as a thing of the past. Clearly, we do have to look to the future and there are numerous challenges ahead for NATO but, as ISAF draws to a close on 31 December 2014, the IED threat has not gone away. The IED is both a current and future threat. Work must continue in order to prevent, in a few years time, our successors being confronted with the issues that confronted this generation in terms of the Alliance and its Partners being able to effectively counter the IED threat. However, it is also about appropriate balance; we need to have an effective C-IED capability but not at the expense of an ability to counter whatever our adversary conceives next.

Next Steps

The 'next step(s)' will be vital if lessons identified are to be learned and institutionalised. The JAPCC will need to work with, amongst others, the Joint Allied Lessons Learned Centre (JALLC), the C-IED COE and the C-IED Task Force to identify an effective way-ahead. Out of the paragraphs above describing the '*challenges*' needs to come a simple description of what it actually is that needs to be '*institutionalised*'? These serials then need to be understood in terms of what LoD they span and which levels of command are affected. Only one this has been done can an '*owner*' be assigned who is responsible for ensuring that the necessary steps are taken in NATO to ensure that truly captures the necessary lessons.

Whilst detailed discussion is yet to take place, it would appear that the ideal mechanism for taking this work forward is through the C-IED Task Force's, C-IED Action Plan.

This paper has been provided as an Initial Draft. Work to develop this paper further will continue and the intended next step is to attempt to create an draft matrix of issues, identifying the affected levels of command, LoD involved and proposing an owner.

Some Useful Definitions:

Smart Defence: In these times of austerity, each euro, dollar or pound sterling counts. Smart Defence is a cooperative way of thinking about generating the modern defence capabilities that the Alliance needs for the future. In this renewed culture of cooperation, Allies are encouraged to work together to develop, acquire, operate and maintain military capabilities to undertake the Alliance's essential core tasks agreed in NATO's Strategic Concept. That means harmonising requirements, pooling and sharing capabilities, setting priorities and coordinating efforts better.

Connected Forces: At the 2012 Chicago Summit, Allied leaders set the goal of 'NATO Forces 2020'. This is designed to be a coherent set of deployable, interoperable and sustainable forces equipped, trained, exercised and commanded so as to be able to meet NATO's level of ambition and able to operate together and with partners in any environment. The Connected Forces Initiative (CFI) is essential to ensure that the Alliance remains well prepared to undertake the full range of its missions, as well as to address future challenges wherever they may arise. It also reinforces the message that NATO is displaying its capability and resolve in the light of a changing and unpredictable security environment. The implementation of CFI is one of the key means to deliver NATO Forces 2020.

Overseen and guided by NATO Defence Ministers, CFI has developed and is maturing into a robust and multifaceted project which provides the structure for Allies to train and exercise coherently, reinforces full-spectrum joint and combined training, promotes interoperability (including with partners), and leverages advances in technology. In light of the wide range of challenges facing the Alliance, including Russia's actions in and around Ukraine and their implications, the CFI will be a means to deliver the training and exercise element of the Readiness Action Plan (RAP) agreed at the 2014 Wales Summit and which complements and reinforces NATO Forces 2020 by improving NATO's readiness and responsiveness.

Pooling & Sharing: A European Defence Agency (EDA) Initiative. Based on a German-Swedish food for thought paper on intensifying European military cooperation in 2010 (the "Ghent Initiative"), EDA together with its Member States developed the Pooling & Sharing initiative. The concept refers to initiatives and projects to pool and share more military capabilities among EU Member States.

ANNEX D to
4th C-IED COE LLWS Report

ANNEX D – List of participants

A total of 77 persons attended the C-IED COE workshop.

Country	Attendees		Country	Attendees no
Albania	1		Netherlands	6
Belgium	1		Portugal	2
Canada	1		Spain	25
Denmark	3		Slovakia	1
France	4		Sweden	4
Germany	4		United States	12
Great Britain	8			
Greece	1			
Italy	4			

Organization (not all are listed)	**Country**
EDA	
EU-OPCEN	
NMIONIC	
UNMAS / MINUSMA	
GE/NL CORP	
JDEAL	
EOD COE	
SACT	
NATO JFC HQ NAPLES	
NRDC - SPAIN	
Command Land	Belgium

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Army Intelligence Centre	Denmark
• DEMS TRAINING REGIMENT • OPERATIONS DIRECTORATE • MINISTRY OF DEFENCE	Great Britain
HDF NCO ACADEMY	Hungary
ORDNANCE SCHOOL	Ireland
NATIONAL C-IED CENTRE OF EXCELLENCE	Italy
EOD COY	Portugal
• JIEDDO • Explosive ordnance disposal mobile unit eight (navy) • US Army Europe • AFRICOM	United States
• Heavy Forces HQ • Demining centre • Operations Command • Armed Forces Intelligence Centre	Spain