

Achieving Interoperability in a Joint Interagency Intergovernmental Multinational (JIIM) Environment

Case Study: Joint Readiness Training Center (JRTC) Rotation 17-04

2nd Brigade Combat Team, 25th Infantry Division, USA and 1st Battalion, Duke of Lancaster's Regiment, UK

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This paper outlines Task Force Warrior's initial analysis of achieving interoperability with the 1st Battalion, Duke of Lancaster's Regiment (1LANCS) while conducting Joint Readiness Training Center (JRTC) Rotation 17-04. It serves to provide a framework on successfully integrating a Battle Group or similar battalion sized unit into an Infantry Brigade Combat Team, (IBCT) through execution of tactical operations during a decisive action training environment (DATE) rotation.

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The aim is to capture and preserve best practices while identifying areas of vulnerability within an Infantry Brigade Combat Team to assist in developing future interoperability standard operating procedures (SOPs) for seamless integration within a complex Joint Interagency Intergovernmental Multinational (JIIM) environment. The process of building interoperability will vary between the scope of the operation and the size of the unit or organization attached to the Brigade. This requires Leaders to adapt, maintain flexibility, and tailor a specific package to facilitate interoperability to create shared understanding and enable the flow of communication. Task Force Warrior created a Liaison team specifically designed to embed with 1LANCS to facilitate effective communication and efficient dissemination of mission orders.

Building Relationships

The foundation for building interoperability should be guided by the principles of Mission Command: build cohesive teams through mutual trust, create shared understanding, provide clear commander's intent, exercise disciplined initiative, use mission orders, and accept prudent risk. Developing and cultivating relationships is critical to establishing a strong bond between organizations that will carry them through the struggle of achieving interoperability. Most important to any relationship is trust. 2/25 IBCT and 1LANCS conducted numerous MIL to MIL exchanges consisting of site visits to Schofield Barracks, HI and Cyprus allowing staff and commanders to meet and discuss integration points of friction while building a professional working relationship in the months preceding JRTC Rotation 17-04. To better inculcate 1LANCS into the Brigade formation, 1LANCS leadership and primary staff officers attended a modified Leader's Training Program (LTP), participated in a Brigade CPX, and conducted tactical operations alongside Warrior battalions during Lightning Forge 17, 2/25 IBCT's externally evaluated Brigade level exercise. 2/25 IBCT sent officers to visit Cyprus and brief the Brigade Operations Order to the Commanding Officer of 1LANCS to familiarize them with the Military Decision Making Process (MDMP). Costs for doing such exchanges were typically absorbed by the Brigade and should be planned and budgeted for appropriately by the staff as early as possible. MIL to MIL exchanges are the most effective opportunities to identify key personnel shortcomings, develop preliminary SOPs, develop a cohesive team, and build trust between organizations.



2/25 IBCT and 1LANCS staff officers integrating during LTP prior to JRTC Rotation 17-04.

The most significant factors hindering relationship building between both organizations were failing to clearly identify all points of contention at the earliest stage and the failure to determine how to create interoperability. Interoperability is an all-encompassing term that in our case referred not only to ensuring how to effectively communicate, but also how to mount British weapons systems onto US vehicles drawn at JRTC, determine the appropriate access level based on the classification of information and systems, disseminate information originating on classified systems, certifying drivers on different vehicle variants, understanding capabilities, tactics, and terminology, and so on. Areas that are not problematic within an organic formation quickly become problematic with the addition of organization that has different SOPs and TTPs, thus creating the necessity for a designated interoperability officer. This role should be given to one CPT, at a minimum, on the Brigade staff who has had enough experience within the brigade to understand how it functions. This officer must know who everyone is across the Warfighting Functions on Brigade staff in order to determine who to assign as a proponent for determining feasibility of solving the interoperability related issue. Additionally, this officer must quickly become an SME on the unit being assigned to the Brigade, understanding their task organization, capabilities, and Modified Table and Organization of Equipment (MTOE) thoroughly. Most importantly the LNO needs to solve the biggest hurdle of interoperability, which is enabling the upward and downward flow of information and communication through systems and networks that are not compatible at the outset.

In order to truly understand the full spectrum of interoperability, that officer should be able to conduct multiple visits to the unit his Brigade is receiving to quantify issues across each Warfighting Function (WfF). This individual needs to be confident and capable enough to quickly identify problems, propose solutions, seek help from outside their organization, and be taken seriously by the leadership of the outside organization. He must understand the Battalion being attached as well as all of the enablers associated with that Battalion. 1LANCS received A/2-1 Stryker Company from a SBCT out of Fort Lewis, a Forward Support Company (FSC) from our sister Brigade 3/25 IBCT, a USMC fire support team from 5th ANGLICO, a Command Post Node (CPN) Team from 51st ESB, a Reserve Civil Affairs Team, and a Reserve Psychological Operations Team. Enablers will be discussed in detail at a later point, but it is important to note that they also become the problem of the Brigade when it comes to interoperability from a joint perspective in reference to the USMC. Lastly, this person will serve as the OIC for the interoperability team, in our case TF Warrior LNO team, attached to the 1LANCS for the duration of the operation. This creates a dilemma for the Brigade, as this is not a position on the MTOE and therefore must be pulled from somewhere else, accepting risk in other areas. The LNO cannot be a person who isn't trusted to perform well with minimal guidance, or as the British were fond of saying, "the Least Needed Officer." It also isn't just one person. In our case, a team of five wasn't enough to successfully sustain long term operations. It's imperative that an in depth analysis be done to decide how to pull people and equipment, that aren't readily available within a Brigade, to be diverted and assume a new role on the interoperability team. Hind sight being 20/20, outlined below is what 2/25 IBCT believes to be an excellent starting point for integrating a British Battle Group, similar in size to 1LANCS, into a Brigade formation for a JRTC Rotation. First, the 1LANCS TOC configuration is addressed as understanding the capabilities and tactics the partnered unit brings to the table, which is necessary to understand how to employ personnel and systems into the Battle Group.

1LANCS Battle Group TOC Configuration

Understanding the Battle Group's TOC setup and footprint is imperative to ensure the proper emplacement of critical mission command systems by the LNO team. The 1LANCS TOC consisted of two 9x9' tents and two 12x12' tents with a personal tent for the Commanding Officer. The TOC was powered by the 10k generator supplied by the CPN team. The size of the TOC limited the amount of personnel and equipment that could be inside at any given time. 1LANCS were unable to plug their computers into our network so our Brigade S6 created a specific stand-alone network for them, the Pacific Partnership Network, in order for their computers to be linked together and operate off a common shared drive. As a result, their methods were strongly geared towards analog planning, tracking operations using map boards, whiteboards, and a projector displaying a power point common operating picture (COP) portraying unit icons to provide situational awareness of the Battle Group footprint. The TOC is designed to be established and taken down within one to one and a half hours, making it extremely expeditionary and mobile at all times. Battle Group doctrine concerning how the TOC takes the fight highlights key differences from US doctrine that must be addressed to ensure proper placement of the LNO team to support the Commanding Officer, Battle Group staff, and the Brigade Commander. The Battle Group TOC is pictured below.

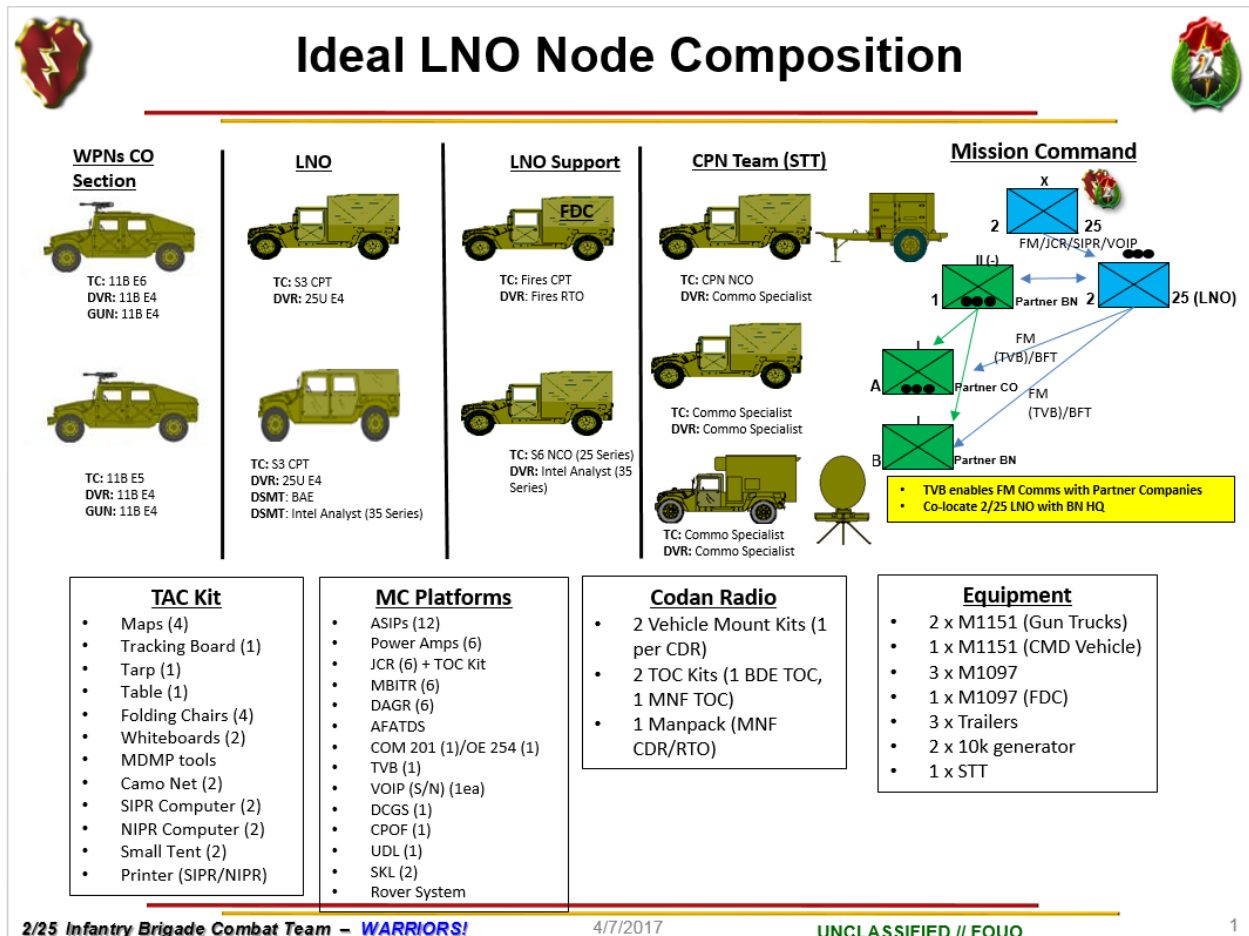


1LANCS Main TOC established on FOB WARRIOR prior to the start of JRTC Rotation 17-04 to rehearse and validate incorporation of the LNO Team.

During the initial stages of an operation, the British Main TOC can break down into two separate entities identified as the "Main" and "Step-up." The Step-up moves forward to identify a key location for the Main to establish and assume control of the fight to allow the Main to move forward. Their version of a TAC consisted of the Commanding Officer's vehicle along with the Regimental Sergeant Major's (RSM) vehicle and a security detachment that positioned itself with the main body or highest point of friction on the battlefield to command and control subordinate units. For the LNO team to be effective, understanding how the incorporated unit functions is critical and enables the Brigade to determine where to place assets and personnel to ensure they are most effective and efficient without hindering the tactics and doctrine of the Battle Group, preserving their internal SOPs.

Tailoring the LNO Package

TF Warrior LNO Team consisted of five personnel: Two maneuver officers (O3 11A/19A) serving as BDE LNOs, one NCO (SSG 11B) serving as Team NCOIC/Battle NCO, one NCO (SSG 25B) serving as Communications and Mission Command systems SME, and one Intel Analyst (SPC 35M). Everyone on the team quickly became dual hatted as truck commanders and drivers. The LNOs became S1-9 in terms of advising on US tactics, SOPs, systems, answering RFIs, and providing input during 7 Questions decision making process as required. As multiple army battle command systems (ABCS) were running, we quickly realized the systems outnumbered our ability to monitor all of them during 24 hour operations and sustain that level of involvement for long term operations. In a perfect world, our ideal equipment package for integrating another unit into our Brigade formation would consist, at a minimum, of the following:



The package above is by no means exclusive or the only answer to a very complex problem posed by interoperability, but it's what the LNO team assesses a Brigade can provide to solve it. The package above shows what a Brigade would have to internally provide without the benefits of outside enablers such as an ANGLICO or CPN team. The LNO team realistically

needs to be the size of small platoon in order to self-secure, run 24 hour operations inside a Multinational Force TOC, maintain equipment and vehicles, and be able to divert power appropriately across the battlefield as required by the commander. The weapons company section of two gun trucks enables the LNO team to self-secure and allows the team to conduct movement between the Battle Group TOC and the Brigade TOC or other area as needed. It is vital for the LNO team to be able to move and solve internal issues or personally retrieve or deliver classified documents and mission orders. At a minimum the ideal LNO team is comprised of two 11/19 series O3s, one Battle NCO, multiple 25 Series NCOs or Soldiers, Fire Support Team, BAE representation, two Intelligence Analysts, and a CPN Team of six personnel led by one NCO. The Battle Group provided a single LNO (O3) to sit in the Brigade TOC for the duration of the exercise, which is half the requirement imposed on our subordinate Battalions as they provide a day and night LNO for continuous operations. 1LANCS did provide and request an LNO to and from an adjacent battalion during every stage of the operation to maintain situational awareness and create shared understanding between the two organizations, which greatly improved the success of combined operations and battle handovers. The 1LANCS LNO at Brigade was limited in his ability to communicate at times, but integrated himself into the planning cycles and provided a means for his commander to reach back and gain information. The Codan HF radio system was his only tactical asset to communicate back and forth. This a system that 2/25 IBCT tested to find a solution for interoperability in partnered countries in the PACOM AOR during Pacific Pathways missions. The British operators received a crash course on the system and, had a US operator been designated within the Brigade TOC to learning it inside and out; it would have been much more useful, which was a critical AAR comment.

Employing Systems

Establishing Upper TI is the most difficult task the LNO team, specifically the CPN Team, will undertake. Initial setup of the STT took anywhere from 2.5 to 3.5 hours and a similar time for teardown during day and night operations with night operations generally taking longer. As a result of the unique TOC concept used by the Battle Group, the only feasible position for the LNO team was with the Main at all times in order to maximize Upper TI connection. The Battle Group TOC jumped a total of nine times during the two week rotation, a JRTC record for TOC jumps. This is why the LNO team needs to remain mobile and in line with its counterpart to preserve tempo and meet the commander's intent. Rehearsals are crucial to successful integration of the complete LNO package and the Battle Group TOC. During JRTC or any deployment, equipment delays and other inhibiting factors can be a detriment to rehearsals which will ultimately weaken the team as a whole. Leaders need to plan for time to rehearse setup and tear down of the entire Battle Group TOC with the complete LNO package on site to take part. Briefly discussed below is the employment of common mission command systems found within an IBCT, highlighting planning factors and things to take into consideration.

JCR is a highly effective mission command system for the LNO team to use to communicate with Brigade Headquarters and adjacent units, but provided limited interoperability with the Battle Group. The Battle Group command team was equipped with BFT1, an unclassified system, which was limited in its ability to communicate with JCR, a Secret system. The LNO team maintained visual awareness of BFT 1 equipped vehicles, but the British had zero visibility on other vehicles on the battlefield. Any messages or chats sent from Brigade had to be selected as unclassified for BFT1 to display content. JCR is extremely vital for the LNO

Team to have and served as the primary means of communication, answering RFIs, communicating with adjacent units, preventing friendly force fratricide, calling for fire, reporting, and the list continues. When the Brigade TOC was on the move, it was generally the only means of communication during the initial entry when 2/25 IBCT was spread out across the battlefield beyond the capabilities of FM. In order to display the JCR Feed to the Battle Group commander, a TOC Kit is required to mount and power the system outside of the vehicle. The other less favorable option, what our team was equipped with, is an extension cord that allows the JCR to be removed from the vehicle up to about 20' ft. in length and is still powered from the vehicle. This setup drains the vehicle battery at a rapid rate and requires constant monitoring to avoid a dead battery. The TOC kit is most preferred as it allows the system to be placed wherever appropriate within the Battle Group TOC and is powered from the generator powering the TOC instead of the vehicle.

FM communications are also extremely important for the LNO Team to reach back or monitor for situational awareness at all times. The Battle Group task organization included A/2-1, a Stryker Company, who they maintained command and control over by using a Tactical Voice Bridge manned by a British RTO placed inside the Company Commander's Stryker ICV. This broadcast the Stryker Company's net across the Battle Group net achieving interoperability between the two organizations very effectively. Our LNO Team was co-located with the Battle Group, providing redundancy using FM and JCR to communicate with A/2-1 in the event that the Stryker Commander's ICV was destroyed or communications were lost. Essential to the package is an FM TOC kit with a COM 201 or preferably an OE 254 to improve range for the radio system.



A Kingsman from 1LANCS stands in front of a Stryker ICV from A/2-1, who worked hand in hand with Corunna Rifle Company during JRTC Rotation 17-04 to engage and destroy the enemy.

Our SIPR computer facilitated the use of CPOF, Ventrillo, and Transverse. CPOF was most useful in providing that missing situational awareness from the JCR that the BFT1 could not replicate using the PLI live feed to show on the projector where adjacent units were as well as obstacles or significant activities. Ventrillo was used primarily as a means to conduct a commander's huddle or rehearsal, which was time consuming when compared to using JCR chat to update the Commander and receive guidance for the next operation. Transverse was the quickest way to get a direct line into any Brigade or Battalion section from CUOPs, to Intel, to Fires and receive instant live feed on what's happening around the battlefield.

Bottom line for understanding the employment of systems in the proper location is that the LNO team must prioritize and master the most efficient ways of receiving information from

the Brigade. Disseminating mission orders and graphics is crucial in creating a shared understanding and clear commander's intent. The LNO team must be able to share that information with the Battle Group to enable them to use it for their own planning products and orders to prevent recreating the wheel every planning cycle.

Obstacles Hindering Interoperability

One of the greatest challenges to overcome in achieving interoperability is understanding the impacts of classification levels for equipment and information and determining how to mitigate the time it takes for information to be received and sent from one entity to another. Foreign disclosure restrictions guide what can and cannot be lawfully seen or utilized by other nations, even allies like the UK. A serious point of contention in building trust between two organizations is overcoming the obstacles created by the classification level (Unclassified, Secret, Top Secret etc.) which hinders information sharing. Incorporating a Battle Group or higher becomes a significant event for a Brigade that is constrained to using Secret (SIPR) network in order to preserve the security of the network and the information itself. The Battle Group could receive information directly via any SIPR system which means they could not incorporate it into any of their own products for planning or execution. Any briefing or commander's huddle conducted on a Secret system such as JCR, CPOF, or Ventrillo had to be operated by a US Soldier with the British Commanding Officer standing beside him dictating his report or briefing. Any FRAGORD or product posted on a SIPR share drive, a common practice for any US Army Brigade, was inaccessible to the Battle Group without the LNO team and the CPN team. Intelligence products such as Annex B were all generated on Secret systems making them impossible to give to our British counterparts unless the LNO team had a hard copy of the product with the appropriate classification level allowing foreign release. This only worked in our case because the information contained within all Intelligence products was actually unclassified as it was for Exercise Only purposes.

The incorporation of enablers was necessary in achieving interoperability, particularly in the case of the CPN team, as without this critical asset, we would not have been able to gain upper TI access throughout the operation. Early on, the LNO team faced difficulty gaining access to the Brigade SIPR portal and establishing a SIPR network as the CPN team was unfamiliar with our Brigade SOPs and information, particularly IP addresses, DSNs, and other critical information required to map our systems. Our CPN team lead was able to establish a NIPR line and using VOIP, he was able to contact our Brigade S6 to get the necessary information required to gain access to the Brigade SIPR network. One critical aspect of incorporating a Battle Group, or similar element, is providing access to upper TI for them. 2/25 IBCT received an external CPN team that wasn't pulled from across our formation. Units without this luxury either need to identify this early on and request support from an Expeditionary Signal Battalion or support this requirement organically, which would be very taxing on the unit.



1LANCS CO LtCol Driver discusses future operations and briefs 2/25 IBCT Commander COL Lugo on a course of action to conduct a raid on the town of Marjani to destroy SAPA elements. Often the best way to communicate and receive clear guidance was to conduct face to face meetings between the two commanders as successful operations on the battlefield became increasingly dependent on the initiative and assessment of subordinate unit commanders.

The ANGLICO team from the USMC provided the Battle Group the ability to process fire missions, control aviation assets, pull live UAS feeds, and request counter fire. Their key leaders (Fire Support Officer and Aviation Officer) were also heavily incorporated into mission planning and expected to work directly with the Brigade Fires and Aviation. The ANGLICO team relied heavily on the CPN team for Upper TI and COMSEC in order to use their own systems. Had the CPN team not had an SKL and the correct COMSEC from Brigade, they would have been unable to use FM to communicate. Understanding Brigade SOPs and processes also became a steep learning curve for both UK and USMC counterparts who initially were not aware of how to call for fire or request aviation and the PACE (Primary, Alternate, Contingency, and Emergency) plans for doing so. They relied heavily on the Warrior LNO Team to solve a lot of communication issues and answer RFIs, while providing an overview of how each section operated with the Brigade staff. This is why it is extremely important to carefully select the right personnel to lead the LNO team; personnel who have experience within the Brigade to understand how it functions and, most importantly, have existing working relationships with individuals across the staff to quickly get those answers they may not know. Incorporating other enablers adds a level of difficulty to interoperability that must be accounted for in the initial planning stages and not be forgotten during the relationship building stage. It is just as important to develop relationships in a joint environment with enablers as it is with a multinational force prior to conducting any operation and should not be overlooked.

2/25 IBCT got very lucky sharing a common language with our UK counterparts. However, we acknowledge that most partnerships require translators that often have to be sought out and budgeted for, which significantly compounds the problem of achieving interoperability. This begs the question of who provides the translators; US, partner force, or

both. Furthermore, what is their level of clearance and understanding of tactics and doctrine? What may be lost in translation, and what fail safes are in place to ensure that does not happen? Outside of language there were some stark differences between US and UK operations. One example of this is urban operations TTPs. The UK soldiers tend to clear structures from top down, utilizing ladders to enter buildings from second or third stories. US forces rarely conduct house clearance the same way. Furthermore, US forces conduct a more static defense of TOC locations with 360 degree security and possible patrols, whereas the 1LANCS utilized a constant roving patrol concept. Such differences in tactics, while small, can cause rifts in interoperability operations. Therefore, gaining a shared understanding of tactics greatly benefits both organizations. Finally, the UK approach to planning military operations above Company level was known as the 7 Questions. While the US Military Decision Making Process (MDMP) is very similar, there are differences in input, output, and audiences. It is imperative that both entities understand where leaders need to be and when to facilitate a smooth planning synchronization. Luckily our LNO officers were able to participate in LTP with the 1LANCS and gained many reps at conducting the 7 Questions alongside UK counterparts, and the 1LANCS 2IC was a former staff college instructor and very familiar with MDMP.



Sharing TTPs and SOPs is perhaps the most rewarding part of interoperability aside from mission success. 1LANCS Soldiers from Corunna Company clear a building from top down by breaching a second story window using a ladder, part of a standard equipment set carried by British infantry squads during a livefire exercise at Peason Ridge during JRTC Rotation 17-04.

The Way Ahead

Interoperability is a challenge best attacked by identifying the problem set early and allocating the right personnel within each organization to take ownership of it from start to finish. All organizations and enablers, mainly the Brigade and Battle Group, need to be involved and

work side by side to address points of friction and build trust. Discuss how best to incorporate the Battle Group into the operational environment and get familiar with one another's SOPs to understand strengths and limitations, characteristics and capabilities, and personalities or human dimension within each organization. The absence of trust between organizations limits interoperability and can often result in isolation versus integration of organizations. The Battle Group should feel welcomed into the fold, not like the Brigade outsider that is sidelined or underutilized during tactical operations. Find a way to create a seamless exchange of information between each organization before the operation and test it during a VALEX or other rehearsal using the mission command systems for validation and you'll relieve a majority of the pain that accompanies interoperability. Interoperability is not just about communication, it is an all-encompassing term that rolls up many issues into one, which is why it must be carefully studied to dissect and treat each issue appropriately. Achieving multinational interoperability will be an enduring mission for US forces as we continue to conduct high-intensity combat operations within a highly complex and challenging environment. Only by identifying the gaps early on can we set ourselves up for future success by ensuring to document best practices from a technical and procedural aspect that can be carried forward in future coalition partnerships making multinational interoperability less of a challenge.

**For an in-depth study, reference the Multinational Interoperability Reference Guide, CALL Handbook 16-18, dated JUL 16. <http://usacac.army.mil/sites/default/files/publications/16-18.pdf>*