Why Are Lessons Not Learned, How Can Policy and Standards Ensure Data Exchange and Truly Enable Lessons to Be Learned

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ABSTRACT

Planning and executing exercises has no meaning if nothing is learned and improved for future military operations. Most of the western countries and International Organizations have developed their own Lessons Learned (LL) processes, along with their LL tools. The tools might work for the individual organization, but when they want to share their lessons, or even submit their observations or lessons identified with another organization, it is often not feasible because of a lack of a common standards for data exchange.

This lack of interoperability results in "cut and paste" procedures between systems which discourages the exchange of Lessons. The United States for example, wanted to disseminate their lessons from the multinational TRIDENT JUNCTURE 2018 Exercise with other participating nations. After many efforts it was deemed not possible due to lack of standards and the ability to easily exchange data in the same formats and structure.

Also, other nations tried to share lessons learned data from operations and exercises with UN, EU, and other partner organizations but the lack of common standards made it complex and time consuming. In order to address this gap in the interoperability of the different LL tools and systems, the NATO Joint Analysis and Lessons Learned Centre (JALLC) has developed a working form that could be easily adopted by all the NATO countries and partner Organizations ensuring efficient data exchange and ability to truly share data. This paper will outline the present situation, the requirements across our nations and introduce a workable solution.

It will also describe the experiences of capturing LL and ways to ensure these are shared between Organizations resulting in true lessons learned and not just identified but never implemented. The LL systems can also be applied to other areas of interest, such as eLearning, simulation, etc.

ABOUT THE AUTHOR

Francisco Garcia de Paredes, was born in Ferrol (Spain) in 1970. He is a 1994 graduate of the Spanish Naval Academy. Served in different surface units such as Aircraft Carrier "Principe de Asturias", Amphibious Transport "Castilla", Oceanographic vessel "Hesperides" (sailing the Antarctic seas), Corvette "Diana", etc. and commanded the Patrol Boat "Grosa" in 2004. Finishes the Joint Staff Course in 2008, serving in different Headquarters in the areas of Human Resources, Operations and Logistics. Promoted to the rank of Commander in 2015, between 2017 and July 2020 was appointed as NLLP Project Manager at the Joint Analysis and Lessons Learned Centre. On completion of his three-year tour, he was offered to continue as a civilian consultant.

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INTRODUCTION

The North Atlantic Treaty Organization (NATO) requested the Allied and Partner Nations to share their Lessons Identified (LI) and Lessons Learned (LL) during the COVID-19 worldwide crisis. Nevertheless, the lack of a common standard and procedures deterred this campaign. The issues arising from the lack of a common standard were previously observed during the major exercise TRIDENT JUNCTURE 2018 and again during the CAPABLE LOGISTICIAN Series, and they will be repeated until the different allied LL processes are synchronized and the LL tools achieve a full compatibility in terms of a common exchange form.

Staffing and Sharing Lessons is complex within one organization: Nations have different LL tools for the different Secretaries/Departments, and Armed Forces have different tools for each Service that are different from the Central (Joint) one. International organizations (such as NATO, European Union, United Nations, etc.) also have different tools, different concepts, and different processes. An international organization like NATO implements different LL tools for the NATO Headquarters, the Command and Force Structures (NCS/NFS), the Centers of Excellence, and the Education and Training Facilities. Even in the same Structure (such as the Allied Command for Transformation) different tools may coexist. Of course, each NATO and Partner Nation has a different LL tool. Surprisingly, the Bi-Strategic Command (Bi-SC) Directive 080-006 establishes only "guidelines" for NATO Bodies outside the NATO Command Structure (this is: NATO Centres of Excellence, Education and Training Facilities, Allies including NATO Force Structure and Partners) and the NATO LL Policy (2011) is outdated, in particular when referring to the "Lessons Learned Database", which was the predecessor tool of the NATO LL Portal.

Not only are the tools' schemas different, but also the concepts due to a lack of standards. If the use of different languages is added to the mix, then a modern Babylon exists where no one understands what the others are saying. But, how can this poor coordination exist in a community which promotes the improvement of other communities and organizations? Is the shoemaker's son walking barefoot? How can others learn form a discipline that does not learn itself?

So, is it possible to share anything, and will LL ever be able to be disseminated outside a local community? Finally, events like the I/ITSEC are excellent LL generators. Lots of Lessons throughout Conferences, Workshops, etc. are seldom disseminated to the LL Community and the interesting issues are not summarized in a LL form nor shared using a common standard.

LACK OF COMMON CONCEPTS

We may think that it is just a problem of interoperability, a lack of a common standard and a multinational tool. But the reality is that some basic concepts are not shared throughout the different allies and partners. In theory while each organization is different and may develop their internal resolution procedures, there are some steps and principles that are fundamental elements in developing a successful, repeatable resolution process. After the TRIDENT JUNCTURE 2018 (TRJE18), the US Joint Staff – J7 offered to NATO more than 200 logistic observations, expecting that NATO would share them with the allied and Partner Nations. Therefore, it is important to understand the similarities and differences between the US "Joint Lessons Learned Information System" (JLLIS) and the "NATO Lessons Learned Portal" (NLLP), in order to create a procedure to import those (every) JLLIS Observations.

The easiest way of comparing both systems is taking the existing online Joint Lessons Learned courses available in their eLearning platforms:

- The NATO "Lessons Learned Online Course", available in the "Joint Advanced Distributed Learning" (JADL)
- The US "Joint Lessons Learned Program" course, in the "Joint Knowledge Online" (JKO)

To understand the present research, it is desirable to have a minimum knowledge about Lessons Learned. As both platforms are unclassified and no special token (for example, Common Access Card) is required, it is highly recommended to take both courses, which can be done in nearly six hours.

There are two good examples to demonstrate the disparity between both LL processes:

- *Same term, different concept*: the use of the term "validation" is quite different in both processes. Whilst "Within the JLLP, validation consists of recognition of a JLLP observation as valid", in NATO "When necessary, validation is done to ensure that the originally observed issue has been successfully corrected by the implemented remedial action". So, the US *validation* is the milestone between Observation and Lesson Identified, and in NATO it is an optional step at the "Implementation phase" (very similar to the US "Evaluation" phase).
- *Same concept, different terms*: the final phase in both Lessons Learned processes is called "Dissemination" in the US and "Information Sharing" in NATO. Both are classified as internal and external and attending to their definitions they imply almost the same.

But it is not a matter of terminology, because it would be just a semantic divergence. The problem starts when the foundational concepts are different. Let us see how an Observation is built in both systems:

NATO (NLLP)	US (JLLIS)
OBSERVATION	OBSERVATION
DISCUSSION	DISCUSSION
CONCLUSSION	--
RECOMMENDATION	RECOMMENDATION

Table 1. Comparison of NATO and US Observations main fields

It is obvious that the NATO Observation, Discussion, Conclusion, and Recommendation (ODCR) format contains one field more than the US Observe, Discussion, and Recommendations (ODR) format: the "Conclusion" field. Its purpose is to determine the root cause of the issue and what we can learn from the discussion. It is the outcome of the Joint or Command Analysis and it is the cornerstone for the next coming Recommendation field. Furthermore, the US JLLP is complemented with an "Implications" tab, which should identify "the impact if action is taken or the consequences if not." *Implications* also answers the questions, Why is this observation important? What could happen if this issue /recommendation are ignored? Are there impacts to other organizations? By the way, NATO is working now in a new "Impact" field, but it is still in an embryonic stage and is more focused on a quantitative value (High-Medium-Low) than is a descriptive free-text field.

Regarding the status, there are also major differences:

NATO LL Process	US JLLP
Observation Submitted	Observation (Pending)
Observation	Observation (Active)
Lesson Identified	Issue
LI for Remedial Action	Issue with Solution
Lesson Learned	Lesson Learned

Table 2. NATO vs US Status

Whilst NATO uses the term "Lesson Identified" ("An observation with analysis, where the root cause has been established, a recommended remedial action and a Tasking Authority identified"), the US JLLP uses the term "Issue"

("An observed, analyzed, and validated shortcoming, deficiency or problem that precludes performance to standard and requires resolution-focused problem solving"). It is not just a matter of terminology: a Lesson Identified is linked to a single Observation, but the Issue is (or can be) linked to different Observations.
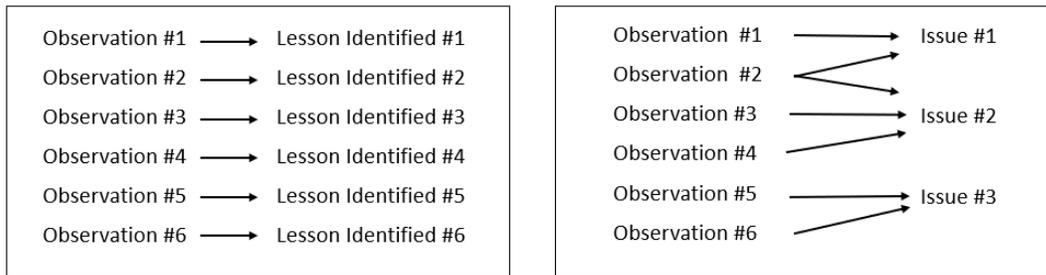

Figure 1. Correlation between Observation and LI/Issue

Metadata is also a source of conflict. The JLLIS Geospatial Module has no correlation in the NLLP. Therefore, all the fields related to this module will not be taken into advantage (from JLLIS to NLLP) or will be in blank (from NLLP to JLLIS). There are also some metadata almost coincident, although showing some differences, which are not under the Lessons Learned umbrella. As an example, the "Joint Capabilities Integration Development System":

NATO	US
DOTMLPF-I	**DOTMLPF-P**
DOCTRINE	DOCTRINE
ORGANIZATION	ORGANIZATION
TRAINING	TRAINING
MATERIAL	MATERIAL
LEADERSHIP	LEADERSHIP AND EDUCATION
PERSONNEL	PERSONNEL
FACILITIES	FACILITIES
INTEROPERABILITY	POLICY

Table 3. DOTMLPF-I vs DOTMLPF-P

This tiny difference might imply a mismatch when the Lessons are migrated from one system to the other and create a constraint difficult to eliminate as it is anchored in the heart of the organization culture.

Differences among Observation, Lesson Identified/Issue and Lesson Learned. The Actors.

An **Observation** (ODCR or ODR format) is submitted by an Originator who might be neither an expert in the topic nor in how the organization should remediate that issue. Each Observation is assigned to an Originating Authority (NATO) /Organization (US). The Originating Authority (OA) is usually the parent HQ, but in exercises sometimes the Officer Conducting the Serial (OCS), the Officer Conducting the Exercise (OCE), or a higher HQ might desire to assume that role.

After analyzing the ODCR/ODR, the OA endorses the Observation to a Tasking Authority (TA). In this moment it becomes a **Lesson Identified**. Note that during this process the original Observation has incorporated an extra volume of information, so called "metadata", composed by tags, categorization, keywords and other fields that will facilitate later the search engines (the compatibility of this metadata is very important during the migration processes). The Tasking Authority will task then an Action Body (AB), either internal or external, to execute the Remedial Action (RA), and after validating the result the LI will become finally a Lesson Learned. If the Observation aims implementing a Best Practice, the process is the same, but we will use the term "Potential Best Practice" instead of "Lesson Identified".

Caveat emptor: for the sake of simplicity, along this document, the term "Lesson Identified" will include the status "Lesson Identified" and "Potential Best Practice" and the term "Lesson Learned" the status "Lesson Learned" and "Best Practice", although they are conceptually different. The acronym OLBP (Observation-Lesson-Best Practice) will represent any item at any status of the LL process.

GETTING DOWN TO WORK

Concepts are important, but the tough part starts when there is an interest to transfer Observations or Lessons from one system to another.

The LL tools

LL data collection is a process during any exercise or operation. There are many different data sources. A data collection plan includes many of the same elements as other military plans including a purpose, a series of critical questions, scope, assumptions, methodology, data management, interview questions, deliverables, and a timeline.

There are two kinds of tools to carry out this data collection and its subsequent use:

1) Collecting tools: they are internal, and sometimes informal, such as an Excel table, a folder on a common network, or a basic web-based tool.
2) Staffing tools: such as the NLLP and the JLLIS, they are official tools, managed by a central agency, and tailored to the structure of the organization. Sometimes they are not implemented in the same network than the collection tools. These tools usually contain a bulky database, including Staffing Areas for active OLBPs and LL-related libraries for LL-related documents, such as After Action Reports, Final Exercise Reports, Joint Analysis Reports or even Lessons from external organizations

It is also noticeable that the LL process runs in parallel to the Command & Control (C2) systems, although the endorsement of a LI is an official tasking. For this reason, the LL Staffing tools should be integrated with (or at least connected to) a C2 System. Nevertheless, during an Exercise or a Mission, the C2 system is usually in a network different to the administrative and the classified ones. Sometimes, there are some firewalls and diodes constraining the transfer of data in one or even both directions. This barrier has a high impact in the day-to-day management of OLBP´s.

As mentioned in the beginning of this document, many LL tools coexist in the same organization. Some of them were even developed *ad hoc* for an exercise. Therefore, the process to transfer the OLBP´s becomes complex, sometimes frustrating, and not always the transfer is successfully achieved.

What's the purpose of sharing lessons? What information is really important?

The disseminating/sharing phase is the one in which lessons reach the customer either in an internal body or in an external organization. The focus of internal dissemination is cross-functional integration within an organization, and the focus of external dissemination is inter-organizational sharing across the force through the lessons learned enterprise. NATO is part of the US LL Program Community of Practice: "The lessons learned community of practice facilitates communication and the exchange of information between different organizations with like responsibilities, concerns, or issues. Being part of the community allows an organization to share with other organizations which may have similar experiences or challenges".

When one organization shares, another is accepting. But an organization cannot just copy and paste others' Observations and there is no sense in implementing others' Lessons Identified/Issues. The LL philosophy is based on the "Learning Organization" concept. "Learning" a lesson means modifying the organization itself, its protocols, or procedures. As each organization is different, the way of learning is also different, depending on its structure and even on its goals. Furthermore, every organization is always different, based on its mission, resources, and relationships.

Like this, during the analysis of the same Observation, the described situation will have a different impact / implication in each organization, and so the recommendations will be different too. Even if the ODCR fields were accepted without any change, the LI should be internally staffed for its resolution. In most of the cases, the Remedial Action (RA) will be different depending on the idiosyncrasy and the resources of the new learning organization. Therefore, the original lesson is not useful as a whole for the accepting organization.

As we have already seen, we can find three different parts in a Lesson:

1) *Content*. The core of the Observation is the ODCR/ODR, and as I mentioned before, the new analysis of the O-D fields might change the Conclusion (NATO)/Implications (US) and Recommendations.
2) *Actors*. Do we care about the TA/AB in the original organization? Of course not. This information is useless for the new organization. One of the most difficult steps when importing a Lesson, in my opinion, is to determine who will become the Originating Authority in the new organization, who will have to assume all the workload. Someone should "put the bell on the cat" and designate the Originating Authority: either the higher LL Authority (if exists) or a specific Marshalling Authority accountable for that task.
3) *Metadata*. The metadata is worthy to search information. The LL tools also use filters, which are based in the metadata. In case the metadata is compatible in the original and the new LL tools, the OLBP could be automatically imported. Otherwise, the original metadata shall be transformed to free text and added to the "Keywords" field, and the new organization shall categorize the Observation manually.

Therefore, "Accept" other's Lessons implies their deconstruction in parts, as well as re-analyzing the ODCR from the perspective of the new organization. This means that a Lesson "accepted", instead of just being archived in the LL Libraries as a LL-related document, must be imported in the Staffing Area.

Sharing internally inside NATO. Experiences in LL data migrations

Different networks, not connected in both directions, require different collecting tools:

- Exercises in NATO are supported by the so called "Mission Networks", different to the "NATO Secret WAN" (NSWAN) due to the participation of Partner Nations who are not allowed to access it. Furthermore, Missions like KFOR or Resolute Support Mission are also supported by this type of Networks.
- Due to security issues or a lack of classified workstations, some actors such as Host Nations or Centers of Excellence use unclassified networks connected to the internet for logistic and admin processes.
- NATO HQ uses their own networks, namely during Crisis Management Exercises. Interestingly, the Observations are collected in the NSWAN NLLP.

Therefore, when the NATO Bi-Strategical Commands want to collect all the exercise-related Observations in one single tool, the problem arises as there is not a clear standard mainly for the collateral metadata (originators information, categorization, comments, attachments, etc.).

But, during exercises, not only LL Observations are collected: evaluation and other processes also generate a number of Observations not related to the LL process. Therefore, non-LL tools might collect LL-related Observations which should be migrated later.

The data shall be collected and managed in such collecting tools. There are two possible approaches:

- Spreadsheet approach: the information is organized in rows and columns. As the layout is sometimes different to the staffing tool´s one, a debug process must be taken after the Exercise completion. Very often, the originators are not available anymore and the ODCR information could be incomplete. Most of the cases, the workload is huge, and manually made.
- Template Approach: each observation is contained in different file. If this Template was developed in compatibility with the Staffing Tool, the data can be easily imported. Nevertheless, the LL Staff Officers will not have an overall picture. The process to merge complementary or similar ODCR in one is complex: each Observation must be amended one by one.

As a result, the data from exercises are hardly migrated to the Staffing tools, the imported data is very often incomplete, and the originators might never know the end state of their Observations.

There is also another circumstance, with a high impact in the collection/dissemination of Observations: the "Level of Planning" and the "Impact" of the Lesson:

- Tactical/Low impact Observations are hardly shared by Operational Commanders, even more if they are associated to embarrassing issues: no one wants to wash one's dirty linen in public, especially when the Originator and the Originating Authority will be published in a public Portal.

- On the other hand, Strategic/political levels are not interested in non-high impact lessons, and they systematically ignore them. Furthermore, the observations submitted within this level are sometimes national-sensitive and could originate diplomatic incidents. Consequently, anything is shared.

During the last three years, I had to perform several data migrations. I will summarize three of them with different level of success:

a) NCS Local Databases Shutdown
    - The BiSC decided at the LL Optimization Action Plan to shut down the NCS local databases.
    - It was the first migration work in the NLLP, and the first phase consisted in achieving a common layout (schema).
    - Then, an Excel Template was tailored to each Headquarter.
    - The information had to be cleaned up one by one, in an exhausting process.
    - It took around three weeks to migrate each HQ internal database.

b) TRIDENT JUNCTURE 2018
    - The Observations were collected in an Exercise Network, using a Share Point tool which wasn't previously validated by the NLLP Team.
    - JALLC developed the "Off-line Observation Form" (OLOF) for users without access to classified workstations. This is a PDF form generated by the NLLP and therefore fully compatible and easily imported in bulk. So far, OLOF only is developed for Observations, and not for other advanced status (see Table 2) in order to be easy, simple and user friendly.
    - On completion of the Exercise, the observations collected at the Share Point tool were analyzed, and some of them were selected to be transferred to the NLLP.
    - The so called "TRJE18 Excel Tool" (TETO) was developed for that purpose. It uses Visual Basic for generating as many OLOFs as rows in the spreadsheet, incorporating NLLP compatible metadata.
    - Regrettably, some information was lost during the process and some metadata was blank when imported.

c) CAPABLE LOGISTICIAN Series
    - The Observations were collected in a Share Point tool, without any coordination with the NLLP metadata.
    - Only Doctrine-related Observations were collected. They were officially staffed and implemented with a high rate of Lessons Learned. Nevertheless, there was neither traceability nor accountability.
    - In 2019 it was intended to migrate them to the NLLP, unsuccessfully. It is still pending to categorize them and allocate the appropriate actors.

Practical example: US DOD (JLLIS) vs JALLC (NLLP)

The constraints to import NATO internal Observations has been previously described. Let´s see now an example of importing external Observations: the US Joint Staff wanted to disseminate their Observations from the TRJE18 with NATO and allied nations, and more than 200 Observations from the JLLIS were offered to NATO. So, what can NATO do with them?

The first option would be just to upload these Lessons in the NLLP Library. Any pdf can be uploaded, and it would be just a matter of filling up the metadata (title, summary, etc.). This will be a passive solution, and anyone who wanted to know about them should just log in and search for the files.

The second option is migrating the OLBP to the NLLP Staffing Area and, so, NATO would be in position to learn them. As I have analyzed before, there are some conceptual differences which are not, nevertheless, an insurmountable barrier. The best solution could be creating OLOFs directly from the JLLIS. If this wasn't possible, we could use the TETO and create as many OLOFs as desired. Then, one Marshalling Authority should assign each Observation to a NATO Body (NCS, NFS, NETF or CoE) who would analyze it, categorized it and endorse them to the Tasking Authorities. Note that this conceptual function hasn´t been established in NATO yet.

RECOMMENDED SOLUTIONS TO THE LACK OF INTEROPERABILITY

Use of common exchange forms

The option to share Observations during and after exercises could be performed using the OLOF. The exchange could be done by email, and migrated to national/enterprise classified networks, getting through all the barriers. Nation´s collecting and staffing tools could be easily adapted to export and import OLOFs, tailored to their own languages.

Use of JavaScript Object Notation (JSON) files would be another way of transferring information. JSON is a simple text form for exchanging data. These files can be easily edited with basic programs such as Wordpad or Notepad.

Development of a Standardization Agreement

A NATO Standardization Agreement (STANAG) defines processes, procedures, terms, and conditions for common military or technical procedures or equipment between the member countries of the alliance. Each NATO state ratifies a STANAG and implements it within their own military. The purpose is to provide common operational and administrative procedures and logistics, so one member nation's military may use the stores and support of another member's military. STANAGs also form the basis for technical interoperability between a wide variety of communication and information systems (CIS) essential for NATO and Allied operations.

The Committee for Standardization (CS) is the senior NATO committee for Alliance standardization, composed primarily of representatives from all NATO countries. Operating under the authority of the North Atlantic Council (NAC), it issues policy and guidance for all NATO standardization activities. Its mission is to exert domain governance for standardization policy and management within the Alliance to contribute to Allies' development of interoperable and cost-effective military forces and capabilities.

The NATO Standardization Office (NSO) initiates, coordinates, supports and administers NATO standardization activities conducted under the authority of the Committee for Standardization (CS). It also assists NATO's Military Committee in developing military operational standardization. Its mission is to foster NATO standardization with the goal of enhancing the operational effectiveness of Alliance military forces. Each of the five "Military Committee Standardization Boards" consist of members of the appropriate Services of the NATO nations and the NATO Strategic Commands. Each STANAG is allocated to a specific Standardization Working Group.

The development of a LL STANAG is foreseen for the next two years, in accordance with the BiSC "LL Plan 2021-25" draft. Nevertheless, NATO LL Policy should also be reviewed, developing, and harmonizing all the LL concepts within NATO bodies.

The LL STANAG should include:

a) Lists: Not only OLBP characteristics would be described on it but also Libraries metadata in order to allow matching data from different system.
b) Forms: The OLOF could be used as technical foundations for this STANAG, and it could be also complemented with a "Off-Line Lesson Identified Form" (OLLIF). JSON forms could be also described in this STANAG as a universal exchange language.

For the JLLIS-NLLP migrations

Lessons can be easily imported in the NLLP Library, but they would be never staffed. If this was the intention, it should be developed a feature in the JLLIS "Export to the NLLP", which will automatically create an OLOF with the ODR fields, comments, security classification, keywords, attachments, and other relevant information.

Nevertheless, the Conclusion field would be always in blank, and the Implications, Geospatial and some other JLLIS exclusive fields would be lost.

Use of the NLLP as Allied/Partner nations' local LL tool

The NLLP is a tool developed in JALLC using Common-funded resources, and it is developed on Share Point. Therefore, the copyright belongs to the NATO Nations, who can request the software to the NATO Communications and Information Agency (NCIA) and implement the Portal in their national networks. Partner Nations could also use it in application of a memorandum of understanding or other agreements.

The NLLP is currently on an overhaul, consisting in a migration to Share Point 2016 servers (completed), the improvement of the usability and existing features, and the development of new functionalities (ongoing). One of them will be the multi-language capability, in terms of navigation although not in terms of contain automatic translation. This functionality will allow to tailor the default language to the national one.

The use of a NLLP replica as national LL tool, will implicitly facilitate a common standard *de facto*. Furthermore, the reduction in development and maintenance costs will be worth it. The upgrades would be routinely provided by NCIA and the training facilities and course development will be assumed by NATO. However, as the NLLP is not a "Plug and Play" software (a Share Point Farm is required to host the site, not fully dedicated), the initial set up of a NLLP replica in the new network may take around two months.

CONCLUSIONS

All the LL systems, processes and tool are similar in a high degree. Nevertheless, a Nation sharing lessons with the different International Organizations has to migrate the information to the different enterprise forms. All the Western allied countries should have a common form to share their observations with all the different organizations, such as NATO, UN, EU, etc. The capability of sharing Lessons among allies are partners is poorly developed, and it is nowadays based only in file sharing. Any other step forward should be carried out manually.

Nevertheless, there are many similarities in all the LL processes, what makes us believe that a common agreement could be achieved in a near future. US Joint Staff (J7) and NATO (JALLC) are creating bridges to facilitate the first effective exchange of Observations as a part of the theoretical dissemination process.

Technical solutions cannot be developed without common concepts. Therefore, LL Doctrine should be very developed among all the members of the LL Community. Cultural barriers are also present, and they can be removed with the appropriate mindset and leadership.

LL data is not always successfully migrated. Nevertheless, some lessons have been identified such as:

- Collecting tools should be evaluated well in advance. Supplementary tools can be developed to facilitate the migration process.
- PDF files can be easily disseminated, although they must be deconstructed in case the new organization intends to learn that Lesson.
- Local metadata, although is useful for search information and to develop filters, is worthless in the new organization: the core information is contained in the ODCR fields.
- A Marshalling Authority shall decide which organization would be responsible for analyzing the Observation from their new point of view.

The dissemination of the lessons to other allies and partners should be facilitated by developing a Lessons Learned STANAG. The NLLP, JLLIS and the rest of local LL tools, shall comply with this new standard for dissemination/information sharing purposes.

The NLLP is one of the best options to be adopted by all the allied and partner countries because it is free. It can be tailored to any language and after the initial set up imbursement, it will require no development, training, and maintenance investment. Use of a common system will also facilitate the development of the allied LL standard.

The Off-line Observation Form (OLOF) has been successfully used during the last two years, and it might be the foundations of a universal standard LL Form. National LL tools should be adapted to import/export Observations using this form. Finally, it is recommended to start collecting Observations during I/ITSEC in order to disseminate its findings among the LL Community.

ACKNOWLEDGEMENTS

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Joint Lessons Learned Information System (JLLIS) User's Guide (v4.3, Feb 2020)
NATO Bi-STRATEGIC COMMAND DIRECTIVE 080-006, dated 23 February 2018, "Lessons Learned"
NATO Lessons Learned Policy, PO(2011)0293, dated 01 September 2011.

LINKS

JALLC	http://www.jallc.nato.int/
JADL	https://jadl.act.nato.int/
JKO	https://jkodirect.jten.mil/
NATO	https://www.nato.int/
NLLP	https://nllp.jallc.nato.int/
NSO	https://nso.nato.int/nso/