

**Allied Command Operations
Comprehensive Operations Planning Directive
Interim V2.0
(Chapter 5 – Operations Assessment)**

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CHAPTER 5

OPERATIONS ASSESSMENT¹

5-1. Introduction.

- a. NATO operations take place in dynamic environments in which the political, economic, social, military, infrastructure and information domains are constantly changing. Commanders need to have the feedback process of *operations assessment*² to inform on progress being made in creating desired effects, establishing decisive conditions³ (DCs) and towards achieving objectives, which in turn allows for adjustments to be made to the plan, and inform the decision-making process for the military and political leadership. Operations assessment also provides an important input in the knowledge development (KD) process, which builds up and maintains a holistic understanding of the situation and operating environment.
- b. Operations assessment can only provide indications of trends in a system's behaviour. Thus, success in operations still heavily relies on a commander's intuition, experience and judgement.

5-2. Definitions of Terms.

- a. In this chapter, the following terms are used:
 - (1) Operations assessment: The activity that enables the measurement of progress and results of operations in a military context, and the subsequent development of conclusions and recommendations in support of decision-making.
 - (2) Measure of effectiveness (MOE): A metric used to measure a current system state.
 - (3) Measure of performance (MOP): A metric used to determine the accomplishment of actions.
 - (4) Risk Assessment: The continuous monitoring of strategic and operational risks at the corresponding level of command.

¹ This chapter describes a metric-based method for Operations Assessment as described in the 19 Jan 13 version of the NATO Operations Assessment Handbook (NOAH). Other approaches to Operations Assessment are under analysis by NATO to complement this metric-based approach. See the latest NOAH for more detail and the most up-to-date information on NATO Operations Assessment.

² **Important Note:** In late 2010, the decision was made to change the formal name of this activity from *Assessment* to *Operations Assessment* in order to avoid confusion with other existing uses of "assessment" in NATO.

³ A decisive condition is defined as 'a combination of circumstances, effects, or a specific key event, critical factor, or function that when achieved allows commanders to gain a marked advantage over an opponent or contribute materially to achieving an operational objective.' (AJP-01(D)).

5-3. Overview of Operations Assessment in Military Operations.

a. The purpose of operations assessment is to support the decision-making process in three areas:

- (1) Operations assessment evaluates the progress of plan execution (actions / tasks).
- (2) Operations assessment evaluates the effectiveness of those executed actions by measuring the achievement of results (creation of desired effects, establishment of DCs, and achievement of desired objectives and the end-state).
- (3) Operations assessment draws conclusions about past situations, in some cases makes forward looking estimates about future trends, and makes recommendations; e.g. to move on to the next phase of a plan or make adjustments to the plan based on these conclusions.

b. Operations assessment can be applied to specific operations, events or topics either within or outside the military plan. Operations assessment may consider a range of timescales from short-term changes to long-term changes over years. There are many ways in which the responsibility for the level and timescale of operations assessment can be divided, depending on the particular context, the level of command and the needs of the Commander.

c. At any level and any timescale, in general, there are two types of operations assessment that will be undertaken typically during an operation: 'historic' and 'predictive'. 'Historic' operations assessment during an operation provides the Commander with an evaluation of completion of actions, and progress toward the creation of the desired effects, establishment of DCs, and achievement of objective(s) and ultimately the end-state. This type of operations assessment utilises historical data to identify trends up to and including the current state. 'Predictive' operations assessment builds on the historic operations assessment and helps extrapolate current trends to the future, thus identifying potential opportunities and risks for the Commander. In addition to past events, predictive operations assessment is based on known future events/plans/intentions/actions and assumptions to develop a forecast of the future situation.

d. Operations assessment supports and continuously interacts with KD, Planning and Execution.

- (1) **Knowledge Development.** KD is critical during planning of operations, but has a strong link to execution and operations assessment. A systems understanding is critical to the initial development of the operations assessment process and throughout the operations assessment cycle the KD process should feed, as well as benefit from, operations assessment activities. The products generated from the operations assessment process will add to the understanding of the operational environment and this information will be fed back into the knowledge base. KD and operations assessment processes will be interdependent by the virtue of their common linkages to the knowledge base.

(2) **Planning.** Operations assessment has a critical linkage to planning: those staff involved in planning and operations assessment must work collaboratively to determine that the tasks, actions, effects and objectives defined in the plan are measurable, and a component of the plan must consider the resources and actions necessary to perform operations assessment. The primary purpose of operations assessment is to support decision-making by providing the necessary recommendations to adapt a plan based on the results from execution.

(3) **Execution.** Execution refers to overall processes and techniques of leading and managing an operation. This involves the preparation of orders and fragmentation orders (FRAGOs), command and control of military actions, and de-confliction or collaboration with non-military actors. Although the leadership and management of operations may vary greatly depending on the situation, scale and personnel, a common component is the necessity for ongoing feedback on the progress of tasks and actions, creation of desired effects and the achievement of objectives. Operations plans are not presumed to be foolproof; during their execution, they will require continuous operations assessment-informed adjustments. Continuous assessment is an essential element of plan execution.

5-4. The Operations Assessment Process.

a. The operations assessment process involves four major steps which are described in detail in the NATO Operations Assessment Handbook (NOAH):

- (1) Designing the operations assessment and support to planning.
- (2) Developing the data collection plan.
- (3) Data collection and treatment.
- (4) Analysis, interpretation and recommendations.

b. This chapter of the Comprehensive Operations Planning Directive (COPD) focuses on the first two stages: designing the operations assessment, and developing the data collection plan. See the NOAH for details.

c. Operations Assessment Staff. This generic term applies to staff within a headquarters (HQ) who work specifically on operations assessment (i.e. at the operational level, in Operations Assessment Branches) and any other staff who contribute to the operations assessment process as and when required.

5-5. Operations Assessment at the Strategic Level.

a. At the strategic level, the term “operations assessment” refers to the development and conduct of the measurement of strategic progress and results of the post-North Atlantic Council (NAC) execution directive activities.

b. In the complex, multi-dimensional and asymmetric military operations of today and of the future, “success” is becoming increasingly hard to define. In previous years, the

battle-damage assessment paradigm focused on military targets: numbers of enemy killed, bridges destroyed, or quantifiable measures about the status of enemy military forces. Experience demonstrates that many extra factors must now be considered, as winning militarily may not necessarily lead to success in every domain.

c. At both the political and military strategic levels, the engagement space must be examined from a comprehensive perspective, across all PMESII⁴ domains, to ensure that all influences, actors and interdependencies have been considered. Activity in the military domain affects – and is affected by – the activity and situation in the non-military domain. Operations assessment at the strategic level must therefore consider progress in the non-military domains in addition to military progress and results. A successful military operation does not necessarily mean that the NATO end-state will be successfully achieved, as there may be many factors outside the military domain that are required for success. Although NATO does not have all the instruments of power⁵ to deal fully with all PMESII domains, a comprehensive strategic-level operations assessment can identify those areas which need to be raised at the NAC.

d. At the strategic level of command, operations assessment is therefore a function that involves varying combinations of: regular measurement of strategic effects and progress towards the achievement of objectives in a military context; regular measurement of strategic progress and results in non-military domains; measurement of strategic progress, with consideration of results of activities of non-military organisations as they contribute to NATO objectives; an overall evaluation of progress towards the NATO end-state; and the subsequent development of conclusions and recommendations that support Supreme Allied Commander Europe's (SACEUR) strategic decision-making, and inform the NAC.

5-6. Organisation, Roles and Responsibilities at the Strategic Level.

a. At the Strategic level, the Supreme Headquarters Allied Powers Europe (SHAPE) Comprehensive Crisis and Operations Management Centre (CCOMC) has the lead responsibility to ensure appropriate strategic operations assessment for SACEUR, in coordination with other SHAPE staff. Where necessary, SHAPE may seek outside expertise for certain aspects of the operations assessment function. At the strategic level, operations assessment staff have the following specific responsibilities⁶:

- (1) Considering the operational level operations assessments received from the Joint (Operational) Headquarters (JHQ) and other areas of NATO, to produce the strategic level operations assessments on ongoing military operations for SACEUR
- (2) Producing for SACEUR the strategic level operations assessments on all other domains

⁴ For explanation of PMESII see COPD Chapter 1.

⁵ See Chapter 1.

⁶ For each operation, duties and responsibilities may be shared and exchanged between levels, which will be defined in the operations assessment OPLAN annex.

(3) Producing the operations assessments required⁷ for the NATO HQ level.

b. As operations assessment at the strategic level considers political, economic and social issues, the practice of operations assessment may be enhanced by the use of subject matter experts (SMEs) to better define and analyse the non-military aspects of a system. Operations assessment staff should seek experts from all relevant domains from: NATO organisations, including: J2, J9⁸ and KD⁹ entities, the NATO Intelligence Fusion Centre¹⁰ (NIFC) or Civil-Military Planning and Support (CMPS) Section; or non-NATO organisations, including: academia, think-tanks, international organisations, or private contractors.

c. Operations assessments at the strategic level should use openly available data sources from international organisations such as the United Nations, World Bank, Organisation for Economic Cooperation and Development, European Union, Organisation for Security and Cooperation in Europe, International Monetary Fund and the International Committee of the Red Cross. All these organisations have well-developed Monitoring and Evaluation¹¹ capabilities, and have detailed reports and subject matter expertise on many conflict areas. See the NOAH for more information on non-military monitoring and evaluation techniques.

5-7. Characteristics of Operations Assessment at the Strategic Level.

a. **Process Overview.** In NATO, planning is initiated as a top-down process that begins with the NAC issuing a decision sheet tasking the NATO Military Authorities to provide an assessment of the crisis situation. In response to the NAC decision sheet and the associated tasking, SHAPE will produce a SACEUR's Strategic Assessment, informing the NAC decision process and eventually serving as a baseline assessment for operations planning (Phase 2 of the strategic OPP as described in Chapter 3 of the COPD).

b. Once the decision has been made to initiate strategic planning, planners will begin developing the strategic Operation Plan (OPLAN) (Phase 4a/4b of the strategic OPP). SHAPE Operations Assessment experts will develop the design of the operations assessment which includes metrics to measure progress and effectiveness.

c. **Strategic Operations Assessment Design.** The strategic OPLAN considers strategic military effects and objectives that contribute to achieving the NATO end-state, in combination with non-military effects and objectives. The design of the strategic operations assessment describes the means by which progress will be measured towards the creation of military strategic effects and achievement of military strategic objectives (MSOs), and their contribution towards setting the conditions necessary to

⁷ The normal strategic operations assessment product required by the NATO Crisis Management Process (NCMP) is the Periodic Mission Review (PMR).

⁸ At SHAPE, J9 Civil Military Interaction Branch has the leading staff role for strategic engagement and outreach with civil organisations.

⁹ Such as the Civil Military Analysis Branch at SHAPE.

¹⁰ The NIFC is tasked through SHAPE J2.

¹¹ *Monitoring and Evaluation* is the equivalent term to "Operations Assessment" that is generally used by international organisations.

achieve the NATO end state, as well as progress in the various non-military PMESII domains in the engagement space. This design should commence during the initial phases of planning. It contributes to the process of defining system state changes and actions by ensuring that these can indeed be observed and measured. Furthermore, the process of determining metrics increases understanding of the corresponding effects and objectives.

d. **Comprehensive Nature of the Engagement Space.** Success cannot be defined in military terms alone. A comprehensive operations assessment of the strategic engagement space and the progress towards the NATO end-state must consider all the aspects of the PMESII domains within the region and the engagement space. Although NATO does not have the instruments of power to act directly in many of these domains, operations assessment at the strategic level must consider:

- (1) Progress and effectiveness of NATO military operations.
- (2) Development of political processes, governance, and civil institutions.
- (3) Security and rule of law.
- (4) Economic development.
- (5) General well-being of local populations.

e. **Intended Audiences and Use.** Strategic level operations assessments may be produced for a variety of different purposes and audiences:

Primary Audience	Focus of Operations Assessment	Intended Use
SHAPE	Strategic overview of ongoing military operations Amalgamation of operational level operations assessments	High level decision-making and necessary adjustments (within the scope of the current strategic OPLAN)
SHAPE, NAC, Military Committee, Host Nations	Comprehensive operations assessment in all PMESII domains	Briefing the NAC Informing NATO political decision-making and strategic communications.
Operational HQs	Strategic implications of progress and effectiveness of operational level missions	Decision-making on necessary plan adjustments for the operational level

Figure 5.1 - Operations Assessment - Intended Audience and Use

- f. **Development of Metrics and Data Collection Plans.** Metrics are the means by which progress and effectiveness can be measured and are divided into MOP and MOE; however, at the strategic level, typically only MOEs will be used. Metrics are normally developed during the initial phases of planning in parallel with development of objectives and effects, but may be refined as necessary during the course of an operation, depending on the specific outcomes and situation. In a similar method to the determination of planning elements (effects / objectives), metrics should be based on systems analysis of key nodes and leverage points. The relevance and importance of individual metrics will vary with the phase of the operation and should both respond to, and inform SACEUR's priorities and the NAC decision-making.
- g. The strategic operations assessment design will incorporate the use of three sets of metrics:
- (1) A set that measures the creation or achievement of the elements in the strategic plan, which contribute to the achievement of the NATO end state: strategic effects and objectives.
 - (2) When required, a set received from the operational level, that measures creation of effects, establishment of DCs, and achievement of objectives and performance of actions in the operational OPLAN, some of which are directly linked to strategic elements.
 - (3) An independent set that may not be directly tied to elements in the strategic plan, but considers the broader PMESII aspects of the engagement space. The progress towards MSOs, for example, will not always be revealed by an amalgamation of MOEs from the operational level. These independent MOE may capture standard data produced by international organisations such as the United Nations.
- h. **Timescales.** In general, operations assessment at the strategic level will consider longer timescales than operational and component levels. Currently, NATO produces a Periodic Mission Review (PMR), which is the formal operations assessment of strategic progress and results normally required by the NATO Crisis Management Process (NCMP). Depending on the specific context and situation, the timescales may change, or different strategic operations assessment products will be required.

5-8. Summary – Operations Assessment at the Strategic Level.

- a. Operations assessment at the strategic level is much more than a simple aggregation of lower level operations assessments, and success at the strategic level cannot be reached only by the achievement of MSOs. The strategic engagement space is a complex, interdependent system of systems including: regional and international powers and political institutions, regional, national and international economies, social and cultural influences, international organisations and non-governmental organisations, humanitarian aid organisations, reconstruction and development agencies, and military forces, both NATO and national.

- b. NATO's instruments of power are military and political; however, SACEUR requires an understanding of how NATO military operations interact with non-military domains, how the activities of non-military organisations contribute to or hinder progress towards achieving MSOs and contributing to achievement of the NATO end state, and how the state of various critical social and economic indicators change.
- c. Operations assessment at the strategic level focuses on the overall progress of NATO military operations and the general state of critical PMESII domains, but considers relevant non-NATO actors. If cooperative planning is conducted with specific non-NATO organisations, cooperative operations assessment should occur.
- d. In some cases, it may be necessary for strategic level operations assessment to take an expanded view and consider two separate missions as a whole when interdependencies exist between the two operations. As an example, the humanitarian assistance mission in Pakistan and the ongoing ISAF mission in 2005, where the former operation, if properly synchronized and coordinated with the NATO mission in Afghanistan, could have had positive strategic impact on the latter.

5-9. Operations Assessment at the Operational and Component Level

- a. The primary focus at the operational and component levels of command is the execution of the military operation and the creation of effects, the establishment of DCs and the achievement of the operational objectives defined in the plan. The operation is planned by the Joint Operations Planning Group (JOPG) and assessed by the Assessment Working Group (AWG).
- b. Plans will need continual adjustment, based on the circumstances of the operation, to be effective. The primary purpose of operations assessment at the operational and component levels is to increase the effectiveness of the execution of military operations. By continually monitoring and analysing the implementation of actions, creation of effects and establishment of DCs and achievement of objectives, the intention of operations assessment is to assist the commander in making evidence-based adjustments to the plan being executed. Operations assessment aims to provide confirmation of the plan design, by demonstrating that the planned actions are indeed creating the desired results, and to improve understanding of the workings of the engagement space. Operations assessment also plays an important role in providing situational awareness relative to the plan.
- c. At the operational level, the process is based on the overall analysis of metrics measuring progress of planned actions (MOP), the creation of desired effects, the establishment of planned DCs and the achievement of planned objectives (MOE). The focus of operations assessment at the operational level is split between two aspects:
 - (1) The first, more broad in nature, seeks to answer the question: "Are we accomplishing the operational military mission?" This involves the continuous monitoring and evaluation of all effects, DCs and objectives specified in the operational OPLAN. Furthermore, the evaluation of desired and undesired effects across all the PMESII domains will be considered, where they impact significantly on the campaign or operation, or where they are explicitly stated in the OPLAN.

This type of operations assessment leads to staff recommendations to the Commander for the development of direction and guidance to amplify/modify the campaign or operation.

(2) The second, more focused, supports the ongoing synchronization and execution of the campaign or operation. It is a short to mid-term review of effects leading to DCs along particular lines of operation, and the evaluation of any special events or situations that may arise outside of the operational OPLAN. It validates current operations and feeds the Commander's decision cycle with recommendations for modifications/changes through FRAGOs or a new joint coordination order.

d. At the component level, the focus is on measuring the achievement of planned actions, tasks or activities using MOP. In some special cases, the component level may measure the establishment of DCs and creation of operational effects using MOE.

5-10. Organisation, Roles and Responsibilities at the Operational Level

a. At the operational level, the Commander owns the operational level operations assessment. The operations assessment staff takes responsibility for development of the operations assessment annex in the OPLAN (Annex OO), and the conduct of operations assessments during execution. At the operational level, operations assessment staff have the following specific responsibilities:

- (1) Acting as the focal point for operations assessment development in their respective HQ, including the contribution to doctrine development.
- (2) Working with the JOPG during development and revision of the OPLAN.
- (3) Considering the component level operations assessments received from their subordinate commands and other areas of NATO.
- (4) Producing the operational level operations assessments on ongoing military operations considering the component level operations assessments.
- (5) Contributing to strategic operations assessments, as required.
- (6) Monitoring the operational level risks.

b. **Operations Assessment Staff at Component Level.** At the component level, the Commander owns the component level operations assessment. The operations assessment staff takes responsibility for development of the operations assessment annex in the OPLAN, if required, and the conduct of operations assessments during execution. At the component level, operations assessment staff have the following specific responsibilities:

- (1) Acting as the focal point for operations assessment development in their respective HQ, including the contribution to doctrine development.

- (2) Working with the JOPG during development and revision of the OPLAN.
- (3) Considering the operations assessments received from their subordinate commands and other areas of NATO.
- (4) Producing the component level operations assessments on ongoing military operations considering the operations assessments of their subordinate commands.
- (5) Contributing to operational level operations assessments as required.

5-11. Operations Assessment Process at the Operational and Component Level.

- a. It is essential that operations assessment personnel are involved from the beginning of the decision cycle¹² of plan, execute, monitor, and assess to ensure that the plan is measureable.
- b. Operations assessment staff are an integral part of the JOPG and support the planning in the different syndicates. The syndicate developing the operational framework must contain operations assessment expertise. The operational framework consists of operational objectives nested within the MSOs, related operational effects and DCs. The operational design¹³ is the key reference for the plan and operations assessment process, and thus forms the basis for the development of the operations assessment annex.
- c. In order to achieve an overall coherent operations assessment plan, the operations assessment development must be conducted as a top down approach throughout all levels of command. Consequently, the operations assessment products at strategic level, especially the strategic objectives and effects, and the strategic operations assessment design must be taken into consideration at the operational level.
- d. Both the planning process and the development of operations assessment products are interdependent. They both must be derived from the operational design. It should be a key goal of the operations assessment staff to develop the operations assessment annex in parallel whilst the JOPG finalises the rest of the OPLAN.
- e. When the main body of the operational OPLAN is drafted, the operations assessment annex must be developed using the expertise of all JOPG areas. The development of MOEs can be given to the relevant SME or subordinate command to ensure maximum validity and coherence. The interdisciplinary development of the operations assessment annex will ensure that the plan is measurable in execution and discrepancies between the plan and reality can be discovered and recommendations for plan adjustment identified.

¹² See AJP-01(D) paragraph 0524.

¹³ The Operational Design is the fusion of the operational framework and the Commander's initial intent. See Chapter 4 paragraph 4-27 c.

- f. During execution, periodic meetings of the AWG ensure that the plan is on the correct track or identify potential plan adjustments for submission to the Commander. The AWG must have an interdisciplinary make-up in order to maintain coherence.
- g. Beyond the AWG, interactions with J2/KD provide key data and analysis for the operations assessment staff. In turn, the operations assessment staff provides feedback to systems analysis and KD to help ensure a common perspective.
- h. The AWG will provide the appropriate data for the Assessment Board briefing to the Commander. The Assessment Board is the formal forum to seek Commander's endorsement of the operations assessment provided. The Assessment Board should culminate in a recommendation to the Commander. The resulting Commander's decision and direction, normally during the Joint Coordination Board, may initiate staff actions and plan adjustments (e.g. FRAGO, Joint Coordination Order, development of branches and sequels, plan review) and adjustments of the operations assessment annex if required.

5-12. Summary – Operations Assessment at the Operational and Component Levels.

- a. It is essential to recognise that operations assessments at all levels are not isolated, but need to be considered in a holistic way in order to understand the whole theatre of operations and beyond. Care must be taken to ensure that operations assessment is not done simply to satisfy itself. Operations assessment is done to monitor and validate the plan during execution and can be a significant part of the decision-making process. Without operations assessment, decision makers will find it more difficult to get the appropriate feedback (plan-execute-monitor-assess).
- b. The operational level is the pivotal point in the overall coherent NATO operations assessment process, as it acts as the interface between the strategic/political requirements and component operations.
- c. A common understanding of operations assessment requirements and procedures throughout all levels of command is to be achieved and continuously maintained via appropriate operations assessment, information exchange, meetings and exercises. Operations assessment is a HQ responsibility.

5-13. Interrelations between Levels of Command.

- a. **NATO Headquarters and SHAPE:** TBD.
- b. **SHAPE and Operational Headquarters.** The strategic level initiates the overall operations assessment process as a top-down approach and gives guidance to the operational level regarding structure of the plan and reporting procedures. The operational level, as the pivotal point in the overall coherent NATO operations assessment process, requires that guidance from the strategic level in order to ensure consistency. Clear reporting guidance from the Strategic Command supports the operational commander's reporting requirements. In order to maximise collaborative work, strategic and operational levels must ensure that their planning and operations assessment staff are fully integrated.

c. **JHQ and Component Commands:** During planning, liaison or planning, experts of the component commands support the JOPG and ensure the synchronisation of planning efforts between the levels of command. The operational design and the operations assessment annex will be the leading references for component level planning and operations assessment.

Operations Assessment - Considerations and Audiences				
Level	Military Considerations	Non-Military Considerations	Audience / Users	Geography
Strategic	<ul style="list-style-type: none"> Creation of the effects and objectives in strategic OPLAN, which contribute to achievement of NATO end state Progress of overall mission and status strategic military assets Capture of overall operations assessments from operational levels Engagement of internationally recognised subject-matter experts on region 	<ul style="list-style-type: none"> Achievement in political, economic, civil, social domains in theatre, as they relate to the achievement of NATO's aims. Achievements of key non-military national government, international, and non-governmental organisations, in theatre, as they relate to the achievement of NATO's aims. Tracking of international organisation's monitoring and evaluation in region (e.g. United Nations reports, World Bank, IMF, OSCE) Monitoring of key international conditions and situations that may impact upon strategic military mission (e.g. international trade embargos, world oil prices, international public opinion) 	<ul style="list-style-type: none"> SACEUR / SHAPE NAC NATO Nations' Defence Ministries Operational Level Commander Host Nation Government IO/NGO HQs International Media 	<ul style="list-style-type: none"> International Regional Joint Operation Area (JOA)
Operational	<ul style="list-style-type: none"> Creation of the effects, establishment of decisive conditions, and achievement of objectives in operational OPLAN Capture of operations assessments from subordinate level Coordination of overall data collection effort Hiring of external contractors required to support data collection / polling etc. 	<ul style="list-style-type: none"> Measurement of key conditions and situations in non-military domains that impact on the operational military mission Achievements of non-military organisations whose goals are specified in the military plan (either through collaborative planning or through estimation) 	<ul style="list-style-type: none"> Operational Level Commander Component Commander CCOMC Local IO / NGO partners Local host nation government Local and regional media 	<ul style="list-style-type: none"> Regional JOA
Component	<ul style="list-style-type: none"> Establishment of decisive conditions as appropriate Achievement of tasks / component objectives / mission Data collection for the component / operational level operations assessments 	<ul style="list-style-type: none"> Data collection activities as assigned by higher commands 	<ul style="list-style-type: none"> Component Commander Operations Planning Group 	<ul style="list-style-type: none"> JOA

Figure 5.2 - Operations Assessment - Focus and Responsibilities

5-14. Operations Assessment Design and Support to Planning

- a. The strategic operations assessment design and the operational OPLAN operations assessment annex describe the means by which one assesses the plan and/or the chosen aspects of the engagement space. Development of the operations assessment design/annex (as applicable) must take place during initial planning. As with the rest of the plan, the operations assessment design/annex will need continuous revision throughout the course of an operation.
- b. The first stage of operations assessment is supporting the development of plans to ensure that the plan is measurable. Within the planning process, there is an explicit link between formulating desired future system state changes (end state, objectives, effects and conditions) and selecting metrics to measure actual systems states at a particular point in time. Appropriate metrics may be qualitative or quantitative, subjective or objective, as long as it is possible to define them in sufficient detail that operations assessments are produced consistently over time. There are two types of measurement in operations assessment: measurement of results (change in system state), which uses MOE, and measurement of activity (action accomplishment), which uses MOP.
- c. **Measurement of Results:** While the planning staff is responsible for writing the desired objectives¹⁴, DCs and effects, they must work in conjunction with the operations assessment staff, who will draft the associated MOEs. The process of drafting MOEs ensures that: a) where possible, progress toward those system states can actually be measured; and b) the meaning of the system state is unambiguous. This interactive process may require modification of currently drafted system states; extreme cases may require drafting completely new effects, DCs or objectives.
- d. Monitoring an MOE over time determines whether or not results are being achieved, as defined in the plan. If there are elements within the plan developed to support other involved non-NATO entities, these items must be considered as well. In addition monitoring an MOE determines the likelihood of important strategic and operational risks occurring.
- e. **Measurement of Activity:** This type of operations assessment measures activity of importance in the engagement space, whether of NATO forces or other actors, using MOP.

5-15. Measures of Effectiveness.

- a. A Measure of Effectiveness is defined as a 'metric used to measure a current system state'. The MOE will help answer the question "Are we on track to achieve the intended new system state within the planned timescale?" This may require multiple MOE per intended system state to fully capture the changes. MOE must be repeatedly measured over time to determine changes in system states, and it is the trends that result from these repeated measurements that allow the determination of progress (or lack of) in an operation.

¹⁴ Note with the NATO mission command philosophy, while there is normally room for some discussion, objectives are given from the higher level to the lower level with the assignment of the 'mission'.

- b. A MOE must:
 - (1) Describe one system element or relationship of interest.
 - (2) Be observable, such that it is measurable consistently over time.
 - (3) Describe how the element is expected to change.
 - (4) Be as specific as possible (ensure you are measuring only and exactly what you want).
 - (5) Be sensitive to change in a period of time meaningful to the operation.
 - (6) Be culturally and locally relevant.
 - (7) Have an associated acceptable condition.
- c. Additionally, a MOE should:
 - (1) Be reducible to a quantity (as a number, percentage, etc.).
 - (2) Be objective.
 - (3) Be defined in sufficient detail that measurements are produced consistently over time.
 - (4) Be cost-effective and not burdensome to the data collectors.
 - (5) Have an associated rate of change.
- d. The setting of explicit targets for each metric to judge the achievement of results is done through the use of four mechanisms:
 - (1) Acceptable Condition (AC): A target level for the metric at which a desirable situation has been achieved.
 - (2) Rate of Change (RoC): A rate of change is the amount of change in a metric over a specific time during an operation.
 - (3) Threshold of Success (ToS): A tipping point at which a positive level of achievement becomes unstoppable and most likely irreversible.
 - (4) Threshold of Failure (ToF): A tipping point at which an unrecoverable situation is reached.
- e. Conditions, Rates and Thresholds may change throughout the phases of the operation, and must be meaningful in the context of the operation, accounting for appropriate regional or international standards. However, the Commander must approve any change of values.

5-16. Developing MOE.

a. Examples of MOE may be found in the NOAH. Some considerations for the operations assessment staff during MOE development include:

- (1) While supporting planners in drafting end state, objectives, DCs or effects, ensure that they can be measured and that their description is written in a manner that can be measured.
- (2) Participate in the operations planning group at their level to ensure changes in the system state that are defined in the plan are accompanied by appropriate, workable MOE.
- (3) Consider data sources for proposed MOE – even if the element can be measured, failure to collect the required data will make it impossible to assess if it has been created (i.e. an effect), established (i.e. a DC) or achieved (i.e. an objective), as applicable. Whenever feasible, plan to use multiple independent data sources to guarantee availability of data and to improve the reliability of the operations assessment.
- (4) Selection of MOE will require significant input from KD or related systems analysis functions. This input provides deeper insight to ensure that the chosen MOE is actually related to the system element in question.
- (5) The relevance and importance of individual MOEs will vary with the phase of the operation and should both respond to, and inform Commander's priorities and decision-making.
- (6) To avoid the trap of assuming causality¹⁵, different MOE are required for each level in the operational design hierarchy (e.g. effects, objectives, etc), which need to be measured independently.

b. Effects that are undesired may be identified during the planning process. Undesired effects are those that disrupt or jeopardise the achievement of objectives; these can include possible negative or detrimental consequences of own-force actions identified in the plan. If plan modifications cannot avoid these undesired effects, they should be incorporated in the plan by defining the opposite of the undesired consequence and re-writing them as desired effects and developing appropriate MOE.

- (1) For example: consider an undesired effect identified as "Due to the perceived hostile presence of own force, local militia activity increases." This may be included in the plan as "Local militia activity remains low" or "Own force not perceived as hostile."
- (2) There may be undesired effects that may not be easily transformed into desired effects, or where doing so may disrupt the construct of the plan. In this case, MOE must still be scripted for the undesired effects. This ensures data

¹⁵ See Para 5-19 – Causality; A Cautionary Note.

collection requirements are identified and the system is monitored for undesired changes.

c. The operations assessment staff may also be called upon to monitor important strategic and operational risks. These are undesired events or situations that may arise independent of the actions of own forces – i.e. the presence or activities of own forces do not affect whether or not these eventualities arise. MOE that monitor for the emergence of strategic and operational risks may be formulated in the same manner as MOE for other changes in system state and included in the data collection matrix.

5-17. Measures of Performance.

a. Once the hierarchy of end state, objectives, DCs and effects have been approved by the Commander, the planning staff begins development of the actions necessary to achieve those system states and must remain involved in crafting the required MOP. However, the key consideration here is ensuring that the MOPs are directly tied to the action – not to the other elements of the plan.

b. The MOP allows the measurement of activity, intending to answer “*Are the actions being executed as planned?*” If, during execution, progress towards the creation of desired effects is not made as expected, one possibility is that actions are not being carried out as planned.

c. A MOP is defined as a “metric used to determine the accomplishment of actions” – usually referring to own force actions. Each level (e.g. operational and subordinate levels) will normally develop MOP for the actions they will execute. Each MOP must:

- (1) Align to one or more (own-force) actions.
- (2) Describe the element that must be observed to measure the progress or status of the action.
- (3) Be observable, such that it is measurable consistently over time.
- (4) Describe how the action is expected to be executed.
- (5) Be as specific as possible (ensure you are measuring only and exactly what you want).
- (6) Be sensitive to change in a period of time meaningful to the operation.
- (7) Have a known deterministic relationship to the action.
- (8) Have an associated AC.

- d. Additionally, an MOP should:
- (1) Be reducible to a quantity (as a number, percentage, etc.).
 - (2) Be objective.
 - (3) Be defined in sufficient detail that measurements are produced consistently over time.
 - (4) Be cost-effective and not burdensome to the data collector.
 - (5) Have an associated RoC.
- e. It is important to note the key difference between MOE and MOP: The MOP measures the status of own-force actions, but does not measure the changes that result from those actions. Results of actions, or changes to the system, are measured by monitoring MOE. In essence, you have direct control over items measured by the MOP, but no direct control over items measured by an MOE. An alternative point of view is that MOP are used to measure the amount of effort being input into a situation, while MOE are used to measure the outcome or impact by looking for the changes that result.
- f. As with MOE, the ToS and failure that indicate the level of achievement of the related action must be included. In general, it is appropriate to shift thresholds or to have planned for different thresholds as phases of the operation change; however, the Commander must approve any change of threshold values.
- g. Again, as with MOE, RoCs can be used to demonstrate the level and RoC of activity that is envisioned within the plan to be undertaken by own forces. Examples of MOP may be found in the NOAH.

5-18. Developing Data Collection Plan.

- a. Once the MOE have been established, the operations assessment staff (with input from the planning staff) is responsible for indicating the methods of data collection and the sources of data in order to monitor the status of each MOE. The majority of MOP data will probably be organic – it will be generated, captured, and reported by units within the command structure, while some might be reported by external non-military organisations.
- b. This process would likely be coordinated by the operations assessment staff using a data collection matrix that should indicate for each MOE or MOP:
- (1) The type of data (including units of measurement).
 - (2) The source of data.
 - (3) The method of collection.
 - (4) The party responsible for its collection.

- (5) The format in which it should be recorded.
 - (6) The required frequency of recording (including start and end times).
 - (7) The frequency of reporting.
 - (8) Any other necessary information.
- c. The creation of the data collection matrix will clarify the 'measurability' of the selected MOE and MOP – forcing further revision of the metrics should it be identified that some are either un-measurable, or that the effort required to capture the data outweighs the benefit of measuring.
- d. When drafting the plan and creating orders, the planning staff will include the data collection requirements specified by the operations assessment staff. In the case where the resources required to collect the data are significant, the planning staff must create separate actions and MOP that reflect this task. Also, care should be taken regarding the resource allocation cost/benefit required for data collection. Once the Assessment Plan is written, and prior to commencement of the operation, all levels of command must start data collection and analysis.
- e. In general, collection of data for MOP should commence when the action(s) start, and stop after the Action is assessed as complete.
- f. Collection of data for MOE will be more situation dependant. In some circumstances reporting of progress towards effects not yet scheduled may yield erroneous results. In other circumstances it may be appropriate to collect data for MOE in order to establish a baseline, which once started should be a continuous process to monitor changes in the system prior to execution. The compilation of data will establish the baseline, which is the capture of current system state(s) just prior to any attempt by own forces to modify the system. This will by definition include evaluation of effects prior to execution of any own actions.

5-19. Causality; A Cautionary Note.

- a. Operations assessment is about measuring execution of implemented military actions and the effectiveness – or results – of those actions. By carefully designing metrics to allow activity (MOP) and results (MOE) to be measured, and then collecting data, operations assessment staff will compare the completion of actions with the level of achievement of results.
- b. It may be tempting or seem appropriate to assume that when all associated actions are complete, the effect must be created; or when all effects are created, the objective is achieved; or when all objectives are achieved, the end-state must therefore also be achieved. Completion of all assigned actions may not lead to creation of the desired effect for many reasons: unknown or unaccounted for actors in the theatre; an unknown linkage with a different system causing an adverse (unwanted) impact; or perhaps not all required actions were identified in the original plan.

c. In general, avoid the temptation to assume causality.¹⁶ Rather than trying to identify and demonstrate how changes in the environment can be “attributed” to particular actions (implying causal relations), it may be more constructive to talk about how activities might or might not have contributed to the creation of effects or the achievement of objectives.

d. The use of words like “correlation” and “contribution” are much more in line with the realities of what can be accomplished by planning and operations assessment staffs. Current thinking in academia on statistical theory and assessment of complex programs is of the view that causality is extremely challenging to infer, in all but the simplest of cases¹⁷.

¹⁶ Adapted from “Assessing Progress in Military Operations: Recommendations for Improvement”, produced by United States Joint Forces Command for Multinational Experiment 6. (Version 0.5, 24 Jul 09).

¹⁷ See, for example, Sobel, M.E. (2000), Causal Inference in the Social Sciences. *Journal of the American Statistical Association*, 95(450), 647-651. Posovac, E&Carey, R. (2007). *Program Evaluation: Methods and cases* (7th ed.).

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