
AIR OPERATIONS
CENTRE OF EXCELLENCE
JFAC ESTIMATE
FUNCTIONAL
PLANNING GUIDE
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It is with great pleasure we provide you, and NATO, with this new version of this guide to support the Operations Planning Process in a JFAC HQ.

With this document, we, the Air Operations Centre of Excellence (AO CoE), attempt to provide planning guidance specific to the Air functional area, and tailored particularly to the JFAC estimate part of the process.

This JFAC Estimate Functional Planning Guide (JFAC-E FPG) is a tool that assists air planners with their contributions to the operations planning process, as part of a headquarters cross-functional planning body.

This guide is a reflection of the AO CoE staff's expertise based on many years of planning experience in both operations and exercises, as well as a tailored tool pulled from NATO's OPP.

This guide can provide planners with an understanding of the JFAC estimate process, while also providing useful, tested processes (checklists) to help with the creation of AOPG products in support of Joint OPLAN development.

It also offers the COMJFAC ideas on the typical direction and guidance they should provide to an AOPG during the JFAC estimate process.

If we envision the AOPG as a combat aircraft during a mission, which entails the decision-making process, the COMJFAC must fuel this combat system with their guidance at each step of the JFAC estimate. This interaction will help to guarantee a safe and successful flight that follows the COMJFAC's desired flightpath.

This guide provides planners and commanders with relevant advice and recommendations for an efficient development of the JFAC estimate.

You will find the recommendations italicised in blue as follows:

➔ *Air Operations COE recommendation, advice or guidance*

Examples are italicised in grey:

➔ *Example for more understanding.*

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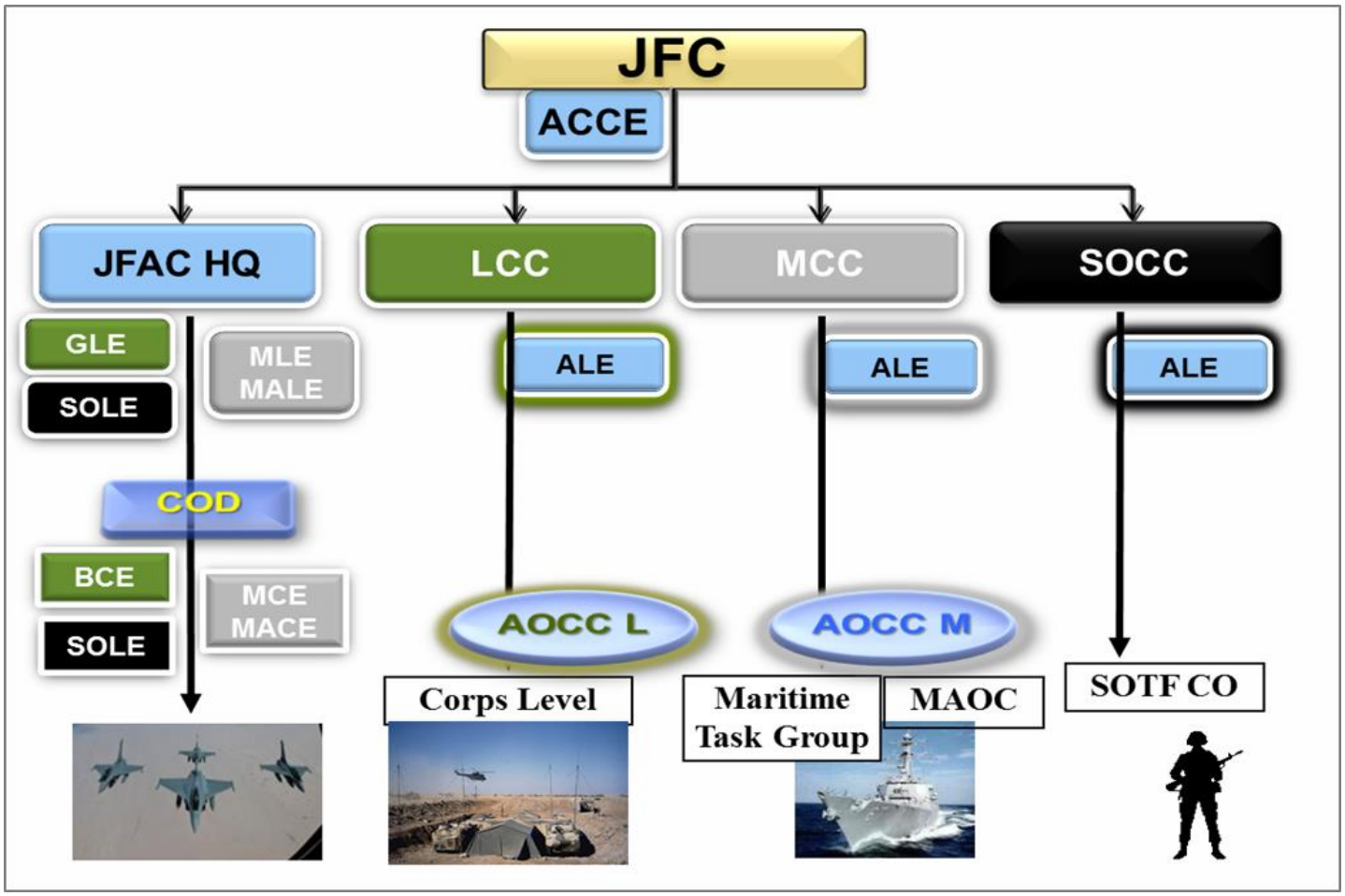
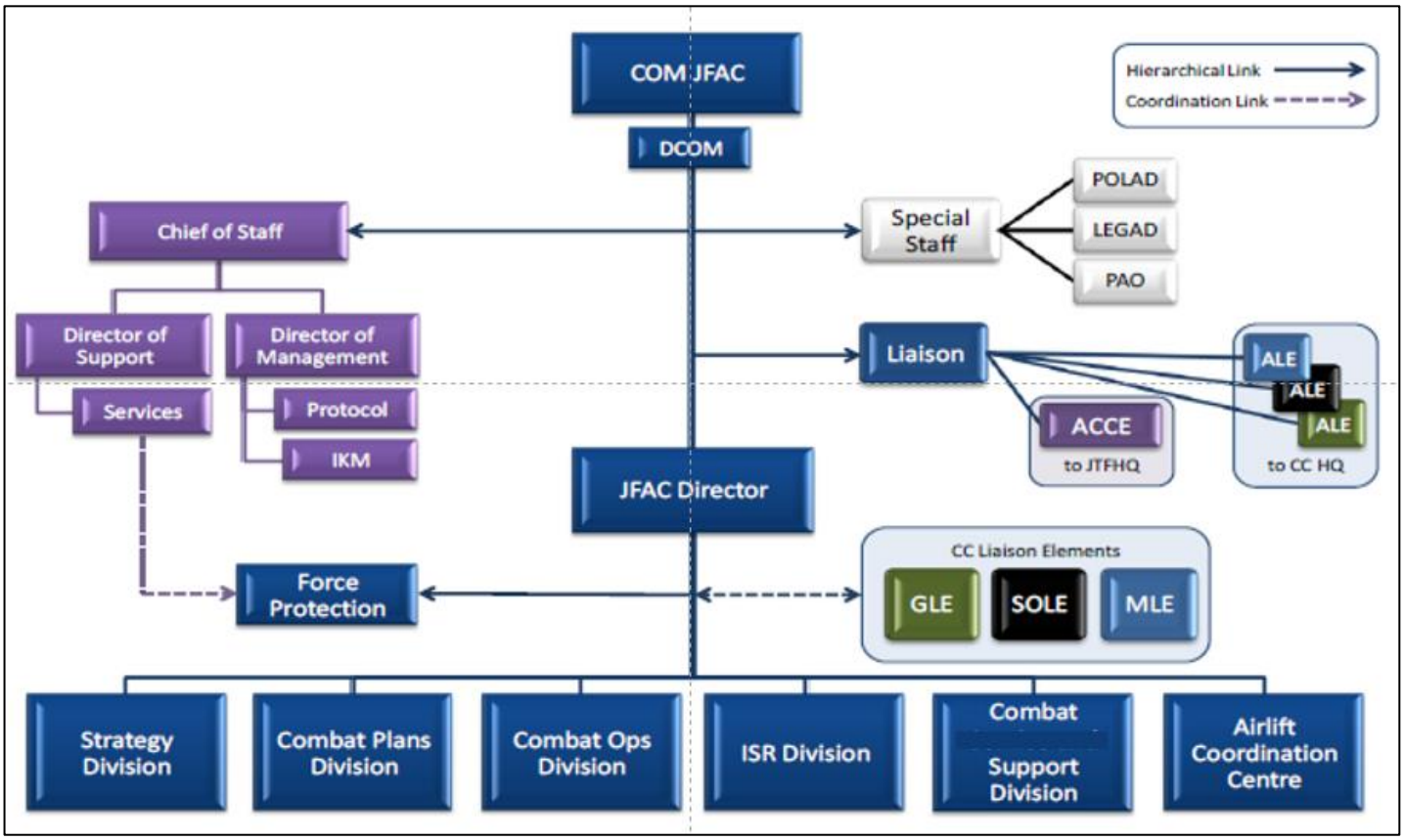
PART A – GENERALITIES / MISCELLANEOUS





1. COMJFAC D & G (DIRECTION AND GUIDANCE)

1.1. COMJFAC initial guidance (to start the JFAC estimate)

➔ Considering their AOPG as a *flexible tool to help* them in the decision making process, COMJFAC should provide the group with initial direction and guidance such as the following, including at a minimum:

- ✓ Recommendations for abbreviating the JFAC estimate due to time constraint.
- ✓ Framing of the problem (principal characteristics of the operation).
- ✓ Key issues and areas of specific attention.
- ✓ Coordination and liaison requirements.
- ✓ Time critical requirements.
- ✓ Contribution to the OLRT/enabling forces.
- ✓ Command group activities that could affect planning.
- ✓ Planning milestones, including specifically when the Commander will be available for a Mission Analysis Briefing (MAB) and COA Decision Briefing (COA DB).

1.2. During Mission analysis

COMJFACs may have to review their guidance during mission analysis when AOPG highlight new issues or challenges that should be considered by the JFAC.

The AOPG should enable the commander's vision. For that reason, Commanders should ensure that planning staff understand the way they think and operate.

COMJFAC should provide the AOPG with insights regarding their which is a critical element that contribute to developing the operational design.

1.3. Post MAB guidance

1.3.1. Cdr's Approvals

The aim of the Mission analysis brief is to seek COMJFAC approval of:

- ✓ Operational Framework;
- ✓ JFAC Mission updates and Commander's intent;
- ✓ Preconditions for Success;
- ✓ Proposed Planning Guidance;
- ✓ ROE requirements;
- ✓ Additional CRMs;
- ✓ Submissions to COMJTF/JTF.

1.3.2. Cdr's planning guidance

The AOPG should receive guidance from the COMJFAC to begin the second stage of the JFAC estimate (COA development).

➔ *The level of detail of guidance will typically depend on the nature of the mission, the operational circumstances, the time available, and the experience of the AOPG.*

On this basis, the COMJFAC may:

- ✓ Specify opposing actions to be considered;
- ✓ Indicate the opposing COAs to be developed. ➔ *This is normally a joint level task.*
- ✓ Establish criteria for COA development and selection. Indicate the weight on them (scoring from 2 to 4), providing the priorities of the commander.
- ✓ Describe, in broad terms, the COAs to be developed.
- ✓ Direct the AOPG to focus its efforts on developing a single COA due to the urgency and nature of the situation

It is of great value to provide AOPG with an explanation of each criteria in order to have the relevant analysis when comparing COAs through commander's criteria.

Examples of criteria with explanation

1. *PROTECTION (protects country X population, government and key facilities)*
2. *RISK TO FORCE (minimises the risk of loss of NATO force personnel and resources)*
3. *DETERRENCE (Earliest possible visible & credible multinational presence to prevent the enemy from launching direct attacks against country X)*
4. *LOGISTICS SIMPLICITY: minimises impact on overall Joint Logistic effort allowing sustained operations; Ability to maintain resilient logistic/medical support.*
5. *FLEXIBILITY: Allows enough assets to exploit success and opportunity (Surge)*
6. *INITIATIVE: JFAC ability to act based on own mission requirements (Time & Space))*
7. *EARLY VISIBLE SUCCESS (Ability to show early and visible success by NATO; Supports compelling enemy regime to withdraw from contested region.*

1.4. Post COA DB COMJFAC guidance

At the end of the COA DB, the COMJFAC should express their decision, including:

- ✓ Clear expression of COM intent
- ✓ Clear direction on the CoA to be developed for CONOPS development
- ✓ Approval of a final operational design.
- ✓ Additional guidance and milestones for the development of the CONOPS.
- ✓ Issues to raise to the COMJTF.
- ✓ Priority issues requiring liaison, coordination or reconnaissance in theatre.
- ✓ Guidance on coordination with relevant national / international actors, for Phase 4 - Operational Supporting Plan Development

2. FUNDAMENTALS OF JOINT AIR OPERATIONS FOR PLANNING

➔ *The successful planning of military operations requires clearly understood and widely accepted doctrine. This is important for joint air operations conducted by multinational forces.*

2.1. Joint air power

Whilst the Alliance can use a variety of military and non-military tools to change the behaviour of decision-makers, state and non-state organisations, this JFAC FPG focuses on air power. The particular attributes of air power offer specific, flexible and responsive ways to create and exert influence; ranging from direct physical attacks to more nuanced, psychological effects.

The air environment is very different from that of maritime or land. Air surrounds the globe and overlays both land and sea. Consequently, air power is inherently Joint. Moreover, air power is most decisive when orchestrated with land, maritime, space and cyberspace power.

The COMJTF delegates the responsibility of developing an Air Tasking Order (ATO) to a Component Cdr. Since the majority of assets and C2 means that follow an ATO are air units, 95% of the time, authority to task air assets is delegated to the COMJFAC

➔ *Think about integrating the other CCs air assets when developing courses of action.*

2.1.1. Air power attributes

Speed. The speed of aircraft allows military power to be projected rapidly and responsively to complete missions quickly. This creates a high tempo and the potential to exploit time.

➔ *Use this attribute to increase the contribution of Air Power to Joint plans.*

Reach. About 70% of the Earth's surface is water, but all of it is covered by air. This provides aircraft with unrivalled reach, mostly unimpeded by terrain, and opens up all of an adversary's resources to attack or influence, however distant or isolated.

➔ *Air power is pervasive, as aircraft are rarely physically constrained by national boundaries or terrain, potentially obtaining access to any point on Earth.*

Height. The advantage of height is an enduring military reality. Air power offers an unparalleled vantage point, facilitating observation and thereby enabling operations within the land and maritime domains.

The speed, reach and height attributes of air power provide the foundation and enhance air power's additional attributes of ubiquity, agility and concentration. In combination, these provide air power's characteristic flexibility as the most responsive and easily scaled tool of national force.

Ubiquity. Air power's reach, combined with the growing persistence available through air-to-air refuelling and high endurance unmanned aircraft systems (UAS), creates the sense of being everywhere all the time. This enables the Alliance to use air power to pose or counter threats simultaneously, and across a far wider area than surface capabilities. Unlike land forces, air power is not fixed at specific locations and its light footprint makes it easier to commit in politically ambiguous circumstances.

Agility. Air power's agility stems from its speed and reach, enhanced by the capabilities of genuinely multi-role platforms. Agility means the Alliance can quickly switch the point of application within and between operational theatres, sometimes during the same mission, and create tactical to strategic effects in a variety of air power operational roles. Agility also means the JTF can easily scale the scope of operations up or down in response to a change in political guidance or political strategic objectives, from air-policing at one end of the spectrum to full-scale war fighting at the other.

Concentration. Air power's speed and reach also enables the JTF to concentrate air assets in time and space to deliver military force when and where it is required. Precision technology means that significant air power effects can be created without the need for large numbers of aircraft; imposing psychological shock that may be crucial to military success.

2.1.2. Air power limitations

➔ *Air planners must consider the air power's limitations and strengths at any time and specifically when developing courses of action.*

Impermanence. Although high endurance UAS and air-to-air refuelling have increased individual air assets' persistence; aircraft still require ground servicing and rearming.

➔ *Consider logistics challenges from the beginning of the component estimate.*

Limited Payload. Aircraft design places a practical limit upon the payload that can be carried such as considerations of aircraft payload weight versus speed and reach. Miniaturisation and precision technology now enables greater impact with fewer and smaller weapons.

➔ *The need for optimisation of air power capabilities is critical as it enables fewer assets to achieve the same results.*

Vulnerability. The nature of the air environment creates specific vulnerabilities: the relative fragility of air assets; the effects of weather on air operations, and the requirement for basing.

➔ *Planners should consider these vulnerabilities, as well as the following:*

Fragility. Air platforms are comparatively lightly armoured which limits the extent to which it is sensible to expose them to hostile fire. Whilst tactics, techniques and procedures (TTPs), low observable technology and platform protection can be used to mitigate the operating risk, air planners must be cognisant of the capabilities (and limitations) of the platforms assigned to a campaign or operation.

Weather. Poor weather can hamper air operations. Commanders require accurate, timely and relevant environmental information in order to maximise the effectiveness of air systems and missions. However, technological developments have enabled air power to operate day and night in adverse conditions, providing a potential operational and tactical advantage that can be exploited against less capable adversaries.

Basing. Most air capabilities depend on regional bases for support. Consequently, diplomacy and upstream engagement may be a key enabler for air operations in order to secure the necessary access, basing and over-flight permissions. Deployed land-based air operations also bring a specialist force protection requirement that member nations need to consider when assigning air assets to an operation or campaign.

2.2. Principles of Joint Air Operations

In order to accomplish the assigned mission, the COMJTF develops a concept of operations (CONOPS), provides their intent for the assigned mission and then organises assigned forces based on the CONOPS. The CONOPS will be further developed into an OPLAN. COMJTF plans and executes specific missions in the Joint Operational Area (JOA), supported by component commanders.

➔ *The JOA is the area in which military effects are achieved. With this definition, planners must assess the capabilities of the air assets and the required mission of the air component in order to provide COMJFAC with any requirement to modify this JOA.*

ADC (Air Defence Commander): COMJTF can delegate the responsibility for Air defence. Usually they appoint COMJFAC as the ADC.

➔ *While building the Air Defence Plan, planners must consider supporting components.*

ACA (Airspace Control Authority): Often designated as the ACA, the COMJFAC will assume overall responsibility for the operation of the airspace control system in the JOA.

➔ *To support these responsibilities, planners must assign clear organisational airspace guidelines within an Airspace Control Plan (ACP). Cf. dedicated Chapter of this guide.*

2.2.1. Unity of effort and command

➔ *This is accomplished through one single ATO per day for all flying air assets. This ATO effectively integrates effects in the JOA and is published by the COMJFAC.*

➔ *NATO air power delivery will, in most cases, be vested in a COMJFAC.*

2.2.2. Centralised control and decentralised execution

Centralised control places the responsibility and authority to plan, direct and coordinate air capabilities with a single commander and his staff. It maximizes operational effectiveness and avoids duplication of effort by allowing commanders to prioritize, synchronize, integrate and deconflict actions of assigned or attached capabilities in time, space and purpose to achieve assigned objectives as rapidly and as effectively as possible.

Decentralised execution is the delegation of execution authority to responsible and capable subordinate commanders to make on-scene decisions that exploit opportunities in complex, rapidly changing or fluid situations. It provides for maximum responsiveness to cope with the uncertainty, disorder and fluidity of operations and makes it possible to generate the tempo of operations.

➔ *To implement these 2 concepts, planners must consider the need for appropriate C2 structure and relevant liaison elements to the JTF and other CCs.*

2.3. Strategy to Task

A crisis leads to a set of unacceptable conditions, which in turn triggers international reactions (e.g. UN resolutions) setting the legal framework for international intervention, in order to reach a mutually agreed end state.

The path from the initial unacceptable situation to the end state is represented by the Operational Design: Lines of Operations (Operational/ or Air Objectives) ; Campaign Phases ; Decisive Conditions supporting effects produced by Tactical Tasks

➔ *Developing the Operational design is a key task during component estimate*

Strategy-to-Task. In order to optimise finite resources, every air task must be linked to the operational level and meet the aim of the overall strategy. The strategy must also be linked through the operational level to what is actually realistic. Of prime importance is for the operational level commander to understand clearly how his/her activities mesh with the other strategic-level lines of operation. Selection and maintenance of the aim is therefore critical to the generation of a coherent air plan.

➔ *Defining measures of effectiveness (MOEs) is a task included in the planning process, which supports our ability to conduct operations assessment throughout the campaign.*

NOTES

3. LOGISTICS IN PLANNING ACTIVITIES

3.1. Functional Areas of logistics

- ✓ Supply
- ✓ Maintenance
- ✓ Petroleum Logisctics (POL)
- ✓ Infrastructure Engineering for Logistics (IEL)
- ✓ Services
- ✓ Medical support
- ✓ Movement and Transportation (M & T)

3.2. The Joint Logistic Support Group (JLSG)

The JLSG is a deployed, executive, theatre-level logistic organisation focusing on greater reliance on multinational solutions. JLSG should allow a corresponding reduction in the requirements placed upon each National Support Element (NSE), so reducing their size and the overall logistic footprint. JLSG missions are:

Conduct RSOM/RMSD operations in order to enable, sustain and maintain Alliance freedom of action

Planning, coordination and execution of operational-logistic support

Coordinate HN/MILENG/MED/CONTRACTOR SUPPORT

3.3. Planning considerations

Logistics activities play a key role in the operation, particularly in facilitating the deployment, support and redeployment phases.

It is essential to analyse the situation and specific aspects (political, economic, social and military), the geography of the theatre as well as the support needs and options. Planners determine the overall logistic support requirements for an operation in order to develop a coherent plan. They should determine the JOA level support and sustainability requirements. Regarding logistics, planners should consider the following:

3.3.1. Movement planning

Development of movement plans is an iterative process that arrange the arrival of forces into the theatre of operations in accordance with the priorities of the COMJTF.

3.3.2. Medical planning

The plan must provide medical capabilities throughout the force structure, which must balance the size of the deployed force and the assessed risk. Planning must ensure that the standard of medical care is maintained as closely as possible to peacetime medical standards, taking into account the operational environment.

3.3.3. Host Nation Support (HNS) planning

Coordination of HNS planning and execution is essential for operational effectiveness, efficiency and the avoidance of competition for resources.

HNS facilitates the introduction of forces into an area of operations by providing essential RSOM support. HNS may also reduce the amount of logistic forces and material.

The NATO Operation Commander's logistic staffs are responsible for the development of HNS arrangements.

3.3.4. Infrastructure planning

Planners assess the operational and logistical needs in relation to the existing infrastructure. Organisational rearrangements, HNS, contractors and/or engineering support should fill the gaps. This process includes safety issues such as ammunition storage.

3.3.5. Contracting and funding

The logistics staff will need to work closely with the financial staff to arrange contracts for required services not provided by military means.

3.3.6. Contributions of Non-NATO Nations (NNN)

NNN should be brought into the force generation process at the earliest possible stage. Where appropriate, their logistic capabilities are identified within the planning process.

3.3.7. Concluding the operation

Planners should consider, from the onset, the planning for the conclusion and long-term consequences of the operation. Re-deployment may involve environmental issues, real estate management, repackaging of ammunition stocks and equipment, and the accounting for and disposal of NATO-owned equipment.

NOTES

4. LEGAL ASPECTS IN AIR OPERATIONS PLANNING

Military power is applied to implement **international legal framework** in order to solve a crisis when politicians have failed to solve the problem. According to the situation, the United Nations (UN) Charter provides military organisations with instruments to settle disputes or to counter act against acts of aggression or breaches to peace.

Military actors must comply with international laws of armed conflict, as well as local laws and mandates. Rules of Engagement (ROE) should reflect those compliances.

4.1. Analysing legal material

4.1.1. United Nations charters

UN Chapter VI : « Pacific settlement of disputes » : ➔ non-coercive action.
UN Chapter VII: « Action with respect to threats to the peace, breaches of the peace, and acts of aggression » ➔ Non-military and military coercive measures;
UN Chapter VIII: « Regional arrangements » ➔ non-coercive or coercive actions.

4.1.2. UNSCR

When analysing UNSCRs, planners must understand what to pay attention at:

- ✓ **Preamble:** Context, Object and purpose of the resolution, what basis?
- ✓ **Threat to peace**: "Breach of peace and security"?
- ✓ **Operative paragraphs:** Contain a Security Council opinion or requested action; Actions/decisions: "use of all necessary means" ;
- ✓ **Peacekeeping mandates** ➔ *impacts on ROEs***.** Consent of the host Party?

4.1.3. ROE

➔ *Higher HQs should provide a set of ROEs. Planners must challenge them to have the legal framework in accordance with Air mission types to deal with the mission requirements. ROEs are the result of political, legal and military inputs.*

ROE and other legal issues are normally developed as part of an OPLAN's Annex E and should result in a suitable ROE profile being available prior to the beginning of operations.

ROE provide boundaries for Commanders concerning the **use of force** (the circumstances, degree and manner in which force, or actions which might be provocative may or may not, be applied). A ROE profile may contain the following information:

- ➢ **Definition of the Joint Operations Area (JOA),**
- ➢ **Reserves (CAVEATS):** To ensure compliance with their own national laws/ policies, each nations may issue reservations regarding the coalition approved ROE profile.
- ➢ **ROE specified authority delegations.**

COMJFAC may ask for a ROE modification through ROE Request (ROEREQ):

- ➢ **ROE request (ROEREQ)**
  - ✓ For authority delegations;
  - ✓ Dormant ROE activation.

MCC 362.1 is the reference material for the development of ROEs.

NOTES

5. AIRSPACE MANAGEMENT & ACP (AIRSPACE CONTROL PLAN)

5.1. Definitions

ACA (Airspace Control Authority): The Commander responsible for the coordination, integration, regulation, use of the JOA airspace, and for the aid in identifying all airspace users. it is a COMJTF responsibility usually delegated to the COMJFAC.

Country's sovereign airspace: according to article 1 of the Chicago Convention, each nation has authority of its national airspace: "The contracting States recognise that every State has complete and exclusive sovereignty over the airspace above its territory".

For the purposes of Chicago Convention the territory of a State shall be deemed to be the land areas and territorial waters (12 NM out from a nation's coastline).

➔ *ACA cannot supersede Nations' rights and has no legal authority on Nations' airspace.*

Only the United Nations Security Council can supersede the Nations' rights on their airspace by issuing a resolution (UNSCR) for the creation of a No Fly Zone.

➔ *The UN Security Council generally only establishes an NFZ to protect populations when they are threatened by air forces.*

Conflict Zone Information Bulletin (CZIB): The European Aviation Safety Agency (EASA) is setting up an alerting system on risks to civil aviation flights over conflict zones, published on this bulletin.

5.2. OPP and Airspace Control Plan

In many operations, wide-ranging interagency and nongovernmental organisation (NGO) operations may be involved and challenge unity of command.

A coordinated and integrated Air control system is essential to the conduct of successful operations because any airspace user's action may affect other users.

An Airspace Control Authority (ACA) establishes this air control system, supports COMJTF objectives and facilitates unity of effort.

In accordance with NATO doctrine, having one Commander with the responsibility and authority to coordinate and integrate air defence and airspace control greatly enhances the ability to achieve a favourable air situation. The planned and coordinated use of airspace increases the flexibility of defending forces and helps to prevent inadvertent attacks on friendly forces or third parties, such as civilian air traffic. Coordinated air defence and airspace control also enables the execution of offensive attacks against an enemy. Those elements are integrated in a single Airspace Control Plan (ACP), delivered by the ACA.

Once COMJFAC is delegated authority as ACA, air planners must immediately consider the safest and most efficient means to manage the airspace considering its integration and coordination with other components and civilian entities within the JOA.

Through the Airspace Control Plan, the COMJFAC is responsible for providing an air environment, which supports the achievement of the Joint campaign.

5.3. ACP process

5.3.1. Objective of this process

ACA must shape the airspace in support of the joint campaign in order to minimise the risks (fratricide / collateral damage) and ensure freedom of movement of friendly/neutral airspace users.

➔ *This is done through the definition of a coordinated airspace in the JOA, with civilian aviation authorities (national and international) and with other component Commanders.*

5.3.2. Actors to engage

Two different situations exist:

Response to the request of a Nation. In this favourable situation, it is the responsibility of the ACA to engage the Nation's aviation authorities to enter into an agreement in order to manage the airspace (responsibilities, organisation of the airspace) during the operations.

Conduct of operations over a non-collaborative state. The ACA has not legal authority over the airspace. The only avenue provided is to issue recommendations concerning the flight safety risks inherent to military operations in an attempt to avoid the presence of civilian flights.

➔ *Stakeholders should act via national or via regional agencies such as EASA (European Aviation Safety Agency) which provides:*

- a CZIB : (https://ad.easa.europa.eu/czib-docs/page-1).
- a map of conflict zones: (https://www.easa.europa.eu/easa-and-you/international-cooperation/easa-by-country/conflict-zones).

NOTES

5.4. ACP outcome

➔ *When developing the Airspace Control Plan, planners should consider these topics:*

- ✓ Airspace Control System area
- ✓ Transition Peace-Crisis-Peace
- ✓ C2 architecture (Cf. Chap. 15 for C2 requirements)
- ✓ Duties/responsibilities
- ✓ Means (radar, Communications, data links)
- ✓ Airspace control methods
- ✓ Integration of civil-military activities
- ✓ Integration of Air Defence (Cf. Chap. 6)
- ✓ Joint Fire
- ✓ Planning the airspace (ACO-ACM)
- ✓ Emergency (aircraft failure)
- ✓ Operations in a degraded environment (radar failure, radio jamming).

AJP 3.3.5 Annex A provides a notional ACP.

NOTES

6. AIR DEFENCE DESIGN AND ADP (AIR DEFENCE PLAN)

6.1. OPP and ADP

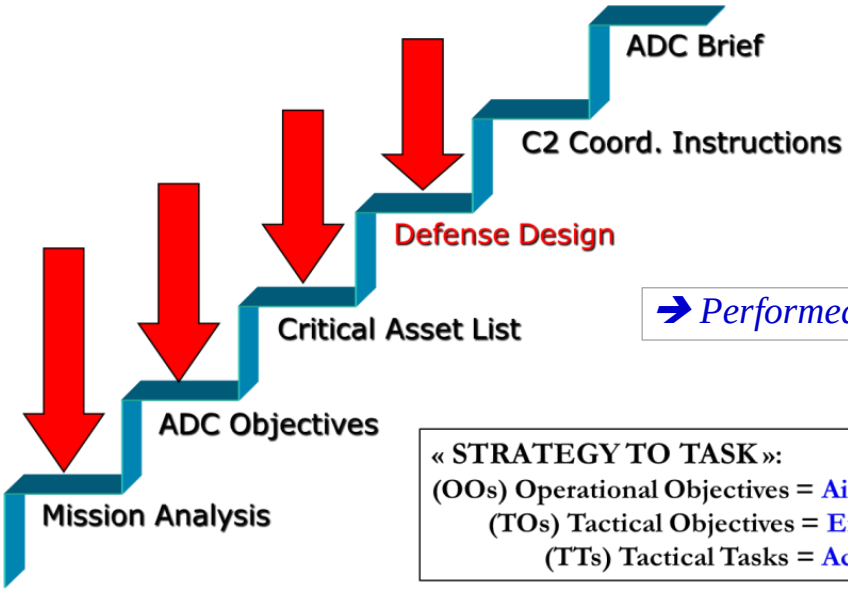
COMJTF can delegate the responsibility of air defence design (Air Defence Commander (ADC)) to the commander, which has the preponderance of AD assets and C4I. It is usually the COMJFAC. The OPP, specifically during estimates, is the period of time to challenge such a design and identify limitations, risks, and opportunities to propose an Air Defence Plan (ADP), which supports the Joint campaign.

COMJFAC should commit the AOPG staff to develop this plan during JFAC estimate work supporting ADC responsibilities. Any level is to provide a Critical Assets List (CAL), which becomes the JPCAL when validated by COMJTF. Once validated by higher levels (SACEUR and political level), the JPDAL is approved by COMJTF.

6.2. Definitions

- **(JP)CAL: (Joint Prioritised) Critical Assets List.** A prioritised list of assets or areas normally identified by phases and released by COMJTF after SACEUR approval. This list should be defended against air and missile threats. Joint Forces assets (e.g.: APODs, SPODs, DOBs, FOBs, HVAAs, HQs, etc.); HN and coalition assets; geopolitical assets; highly populated areas; etc.
- **(JP)DAL (Joint Prioritised) Defended Assets List**: The list of those assets from the (JP)CAL that receive theatre level protection.
- **ADP (Air Defence Plan):** The Air Defence Commander (ADC) plans for a comprehensive theatre Integrated Air and Missile Defence, which is approved by COMJTF. That plan integrates the entire components AD sensors and weapon systems, active air defence design as well as passive defensive measures and C2 system enabling efficient defence. It should include Orders of Battle, Air and Missile Defence CONOPS, CAL and DAL.

6.3. Development process



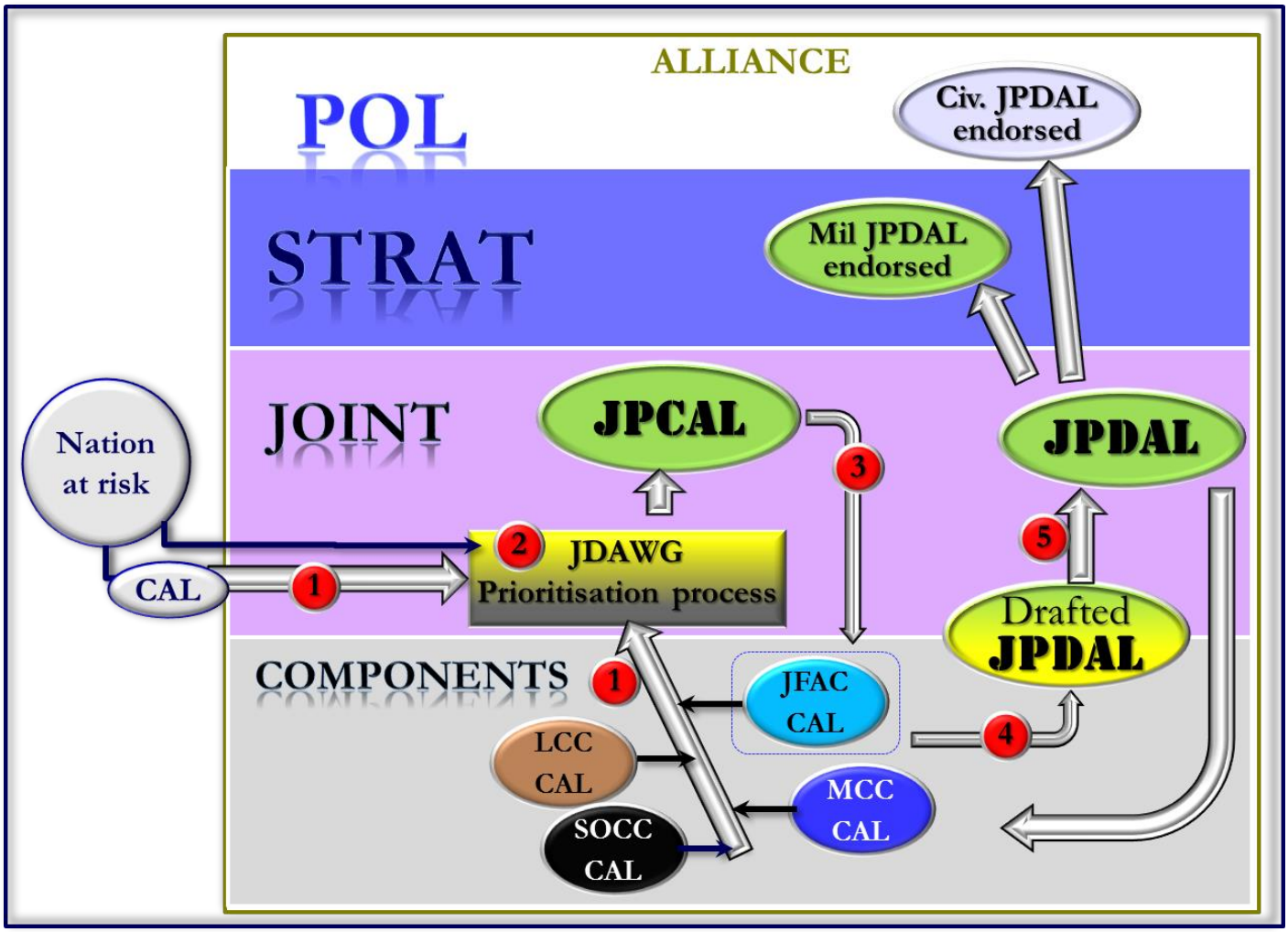
➔ *Performed in the JFAC Combat Plan division.*

« STRATEGY TO TASK »:
(OOs) Operational Objectives = Air objectives
(TOs) Tactical Objectives = Effects
(TTs) Tactical Tasks = Actions/tasks

6.4. Air Defence Design

To cope with General Air Traffic (GAT) and position/capacity of assets, region control sectors are defined with associated responsibilities and ROEs.

Location of sensors, C2 platforms, SAMs and MEZs, CAPs, QRAs and FEZs are fixed **at** the **joint level** based on: threat nature and location, CAL/DAL, force availability, C2 organisation and management, civilian radars, ground/sea based or airborne TAC C2 and data link availability.



1. Components and Nation at risk provide their Critical Assets List
2. Prioritisation set up at the Joint Defended Assets Working Group (JDAWG)
3. COMJTF release the JPCAL
4. JFAC develop the defence design and draft the JPDAL based on JPCAL and available defence resources
5. COMJTF validate the JPDAL

➔ *Then SACEUR and the NAC endorse a part of JPDAL.*

NOTES

7. OPERATIONS PLANNING PROCESS (OPP) & AOPG OVERVIEW

7.1. NATO Crisis Response Process (NCRP)

The NCRP is the process, described in the NCRSM (NATO Crisis Management System Manual), by which the Alliance addresses and, subject to decisions by the NAC, aims to manage and resolve a crisis. NCRP ensures that the Alliance is prepared to perform the whole range of possible Article 5 and Non-Article 5 missions.

7.2. NATO Military Operations Planning

Planning activities and processes are integrated and coordinated to support decision-making and the production of plans, orders and directives for Allied joint operations in any type of environment. Military Operations Planning addresses both **advanced planning** and **Crisis Response Operations** (CRO) planning. The process for Military Operations Planning, known as the **Operations Planning Process** (OPP), is articulated in the in the Comprehensive Operational Planning Directive (COPD).

Operations planning should conform to the principles of coherence, comprehensive understanding of the environment, efficient use of resources, flexibility and adaptability (adjusting to evolving political guidance, civil and military advice), and credibility.

7.3. NATO Crisis Response Operations (CRO) Planning

Crisis response operations planning are conducted in response to an actual or developing crisis (Article 5 and Non Article 5 Crisis Response Operations (NA5CRO) and calls for the development of an OPLAN. The NATO Crisis Management Process (NCMP) is the NATO's overarching system for crisis management that the OPP must support.

7.3.1. The Operations Planning Process (OPP)

When well synchronised with the NCRP, the OPP provides for the timely and efficient development of OPLANs in response to an actual or developing crisis.

The OPP enables the different levels of command to use the same process for a collaborative approach to planning. OPP is oriented towards a NATO end state and strategic objectives, established by NATO's political and military authorities and carried out within the political limitations and resource constraints set by these authorities.

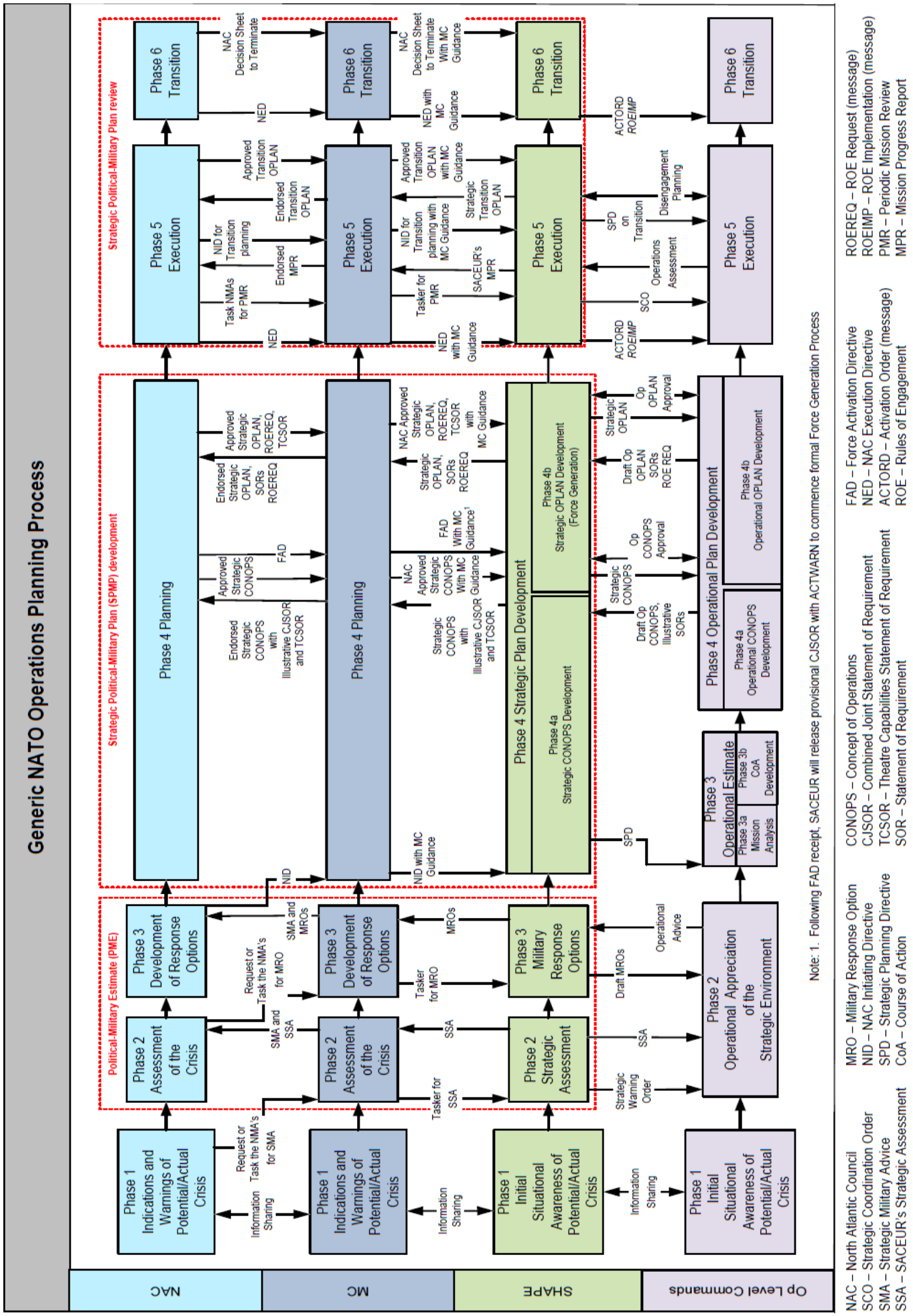
Changing conditions to an acceptable state will require the creation of required effects to achieve planned objectives and contribute to the achievement of the NATO end state. This central idea of planning determines the combination and sequence of actions in time and space using available resources with the greatest potential to create the required effects.

Keys to success:

- ✓ Information sharing between all levels
- ✓ Any promulgated document of a higher level integrates lower level advice
- ✓ Almost parallel working process

7.3.2. OPP from Crisis to the Transition phase

The NCRP is made of 6 linked phases to enable a relevant series of planning activities:


Generic NATO Operations Planning Process
NAC
MC
SHAPE
Op Level Commands
Political-Military Estimate (PME)
Strategic Political-Military Plan (SPMP) development
Strategic Political-Military Plan review
Phase 1 Indications and Warnings of Potential/Actual Crisis
Phase 2 Assessment of the Crisis
Phase 3 Development of Response Options
Phase 4 Planning
Phase 4 Strategic Plan Development
Phase 4a Strategic CONOPS Development
Phase 4b Strategic OPLAN Development (Force Generation)
Phase 4 Operational Plan Development
Phase 4a Operational CONOPS Development
Phase 4b Operational OPLAN Development
Phase 3 Operational Estimate
Phase 3a Mission Analysis
Phase 3b CoA Development
Phase 5 Execution
Phase 6 Transition
Phase 1 Initial Situational Awareness of Potential/Actual Crisis
Phase 2 Strategic Assessment
Phase 3 Military Response Options
Phase 2 Operational Appreciation of the Strategic Environment
Request or Task the NMA's for SMA
Information Sharing
SMA and SSA
Request or Task the NMA's for MRO
Tasker for SSA
Tasker for MRO
SSA
MROs
SMA and MROs
Strategic Warning Order
Draft MROs
Operational Advice
NID
NID with MC Guidance
SPD
Endorsed Strategic CONOPS with Illustrative CJSOR and TCSOR
Approved Strategic CONOPS
FAD
Endorsed Strategic OPLAN, SORs ROEREQ
Approved Strategic OPLAN, ROEREQ, TCSOR
NAC Approved Strategic OPLAN, ROEREQ, TCSOR with MC Guidance
Strategic CONOPS with Illustrative CJSOR and TCSOR
NAC Approved Strategic CONOPS With MC Guidance
FAD With MC Guidance[1]
Strategic OPLAN, SORs ROEREQ
Strategic CONOPS
Draft Op CONOPS, Illustrative SORs
Op CONOPS Approval
Strategic OPLAN
Draft Op OPLAN SORs ROE REQ
Op OPLAN Approval
NAC Decision Sheet to Terminate
NED
Task NMAs for PMR
Endorsed MPR
NID for Transition planning
Endorsed Transition OPLAN
Approved Transition OPLAN
Tasker for PMR
SACEUR's MPR
NID for Transition planning with MC Guidance
Strategic Transition OPLAN
Approved Transition OPLAN with MC Guidance
NED with MC Guidance
NAC Decision Sheet to Terminate With MC Guidance
ACTORD ROEIMP
SCO
Operations Assessment
SPD on Transition
Disengagement Planning
Note: 1. Following FAD receipt, SACEUR will release provisional CJSOR with ACTWARN to commence formal Force Generation Process
NAC – North Atlantic Council
SCO – Strategic Coordination Order
SMA – Strategic Military Advice
SSA – SACEUR's Strategic Assessment
MRO – Military Response Option
NID – NAC Initiating Directive
SPD – Strategic Planning Directive
CoA – Course of Action
CONOPS – Concept of Operations
CJSOR – Combined Joint Statement of Requirement
TCSOR – Theatre Capabilities Statement of Requirement
SOR – Statement of Requirement
FAD – Force Activation Directive
NED – NAC Execution Directive
ACTORD – Activation Order (message)
ROE – Rules of Engagement
ROEREQ – ROE Request (message)
ROEIMP – ROE Implementation (message)
PMR – Periodic Mission Review
MPR – Mission Progress Report

7.4. JFAC (component) estimate

An estimate is a command-led military problem solving process which is applied to ill-structured systems in uncertain and dynamic environments against shifting, competing or ill-defined goals, often in high-stake, time critical situations. The component estimate is conducted in parallel with the operational estimate (joint level). It combines an objective analysis with the power of intuition (a combination of experience, intelligence, creativity and innovation), and its output is SUPPLAN based upon the selection of a Course of Action by the COMJFAC.

The key inputs and outputs of the Compoenent estimate are listed in the follong matrix.

Key inputs	Steps	Key outputs
• SPD • COMJTF mission & intent • COMJFAC's initial guidance • Friendly situation • CUOE • JOPG Key Factors & assumptions • • COMJFAC initial Direction and guidance	**Mission Analysis**	• COMJFAC Mission statement and intent • Factors analysis • CoGs (Centres of Gravity) • Limitations • Assumptions • Risk analysis • COR (Critical Operational Requirements) / CCIR • Initial Operations design
• MAB	**COMJFAC approvals**	• Approved Misison statement • Approved COMJFA intent • Approved JFAC Operations design
• COMJFAC approvals • JOPG and/or COMJFAC guidance for COA dev. • Adversary COAS	**COA Development**	• Friendly air COAs • Synchronisation of joint COA and JFAC COA
• Friendly air COAs • Adversary most likely/dangerous COAs • wargame method (phase / DC / line of operations ?...)	**COA Analysis & Wargaming**	• Refined, valid JFAC COAs • Strengths & weaknesses • Branch : risks/ sequel requirements:opportunities • COMJFAC decision points & updated CClRs • Advantages/disadvantages • Additional force/capability requirements • Synchronisation requirements
• Evaluation criteria • Wargame results	**COA Comparison**	• Pros & Cons of Air COA's • Air COA Proposal to COMJFAC

Key inputs	Steps	Key outputs
• COA Decision briefing	**COMJFAC Approvals**	• JFAC COA Selected by COMJFAC • Approved JFAC Operations design • COMJFAC refinements requested • COMJFAC direction and guidance for CONOPS dev. •
• Approved air CONOPS • Updated staff estimates	**Plan Development**	• Approved Joint Air Operations Plan with appropriate annexes

7.5. Material in support of the JFAC estimate

7.5.1. NATO Crisis Response Process (NCRP)

Process by which the Alliance addresses and, subject to decisions by the NAC, aims to manage and resolve a crisis.

7.5.2. Comprehensive Operations Planning Directive (COPD)

COPD addresses all aspects of an OPLAN and provides guidance on the conduct and methods of planning as well as the factors to be taken into consideration during the development of a plan.

COPD articulates, in separate chapters, the Operations Planning Process (OPP) for the NATO Strategic and Operational levels, in support of the NCRP, in a collaborative approach. COPD Chapter 4 corresponds to the Operational estimate, which is made collaboratively with the component estimate.

COPD can be adapted to any specific environment to expedite the planning process or focus it on specific issues.

7.5.2.1. Functional Planning Guides (FPG)

FPG provide planning guidance in specific functional areas: maritime, air, space, cyberspace, land, intelligence, ROE, logistics, CIS support. This JFAC estimate FPG is one of these guides.

➔ *This JFAC estimate Functional Planning Guide (JFAC-e FPG) provides air planners with a practical tool to contribute efficiently to the overall joint air plan development.*

7.6. OPP staffs involved and Command relationships

7.6.1. Political Level

North Atlantic Council (NAC): the principal political decision-making body of the North Atlantic Treaty Organisation (NATO), consisting of Permanent Representatives from its member countries. NAC provides political strategic guidance

Military Committee (MC): advises the NAC on military policy and strategy.

7.6.2. Military level

Allied Command Operations (ACO) is responsible for the planning and execution of all operations. It consists of permanently established headquarters, each with a specific role.

7.6.2.1. **Strategic level.**

This level translates political guidance into military strategic direction for the operational commander and establishes the conditions necessary to plan and execute the mission.

SACEUR: The Supreme Allied Commander Europe assumes the overall command of operations at the strategic level and exercises his responsibilities from SHAPE.

SHAPE: The Supreme Headquarters Allied Powers Europe, at Mons, Belgium.

CAT: The Cross-Functional Action Team is a staff organisation activated in SHAPE in response to a crisis (potential or actual), and configured in line with the NCRP phasing. The CAT is likely to have Plans, Ops and Supporting elements within it

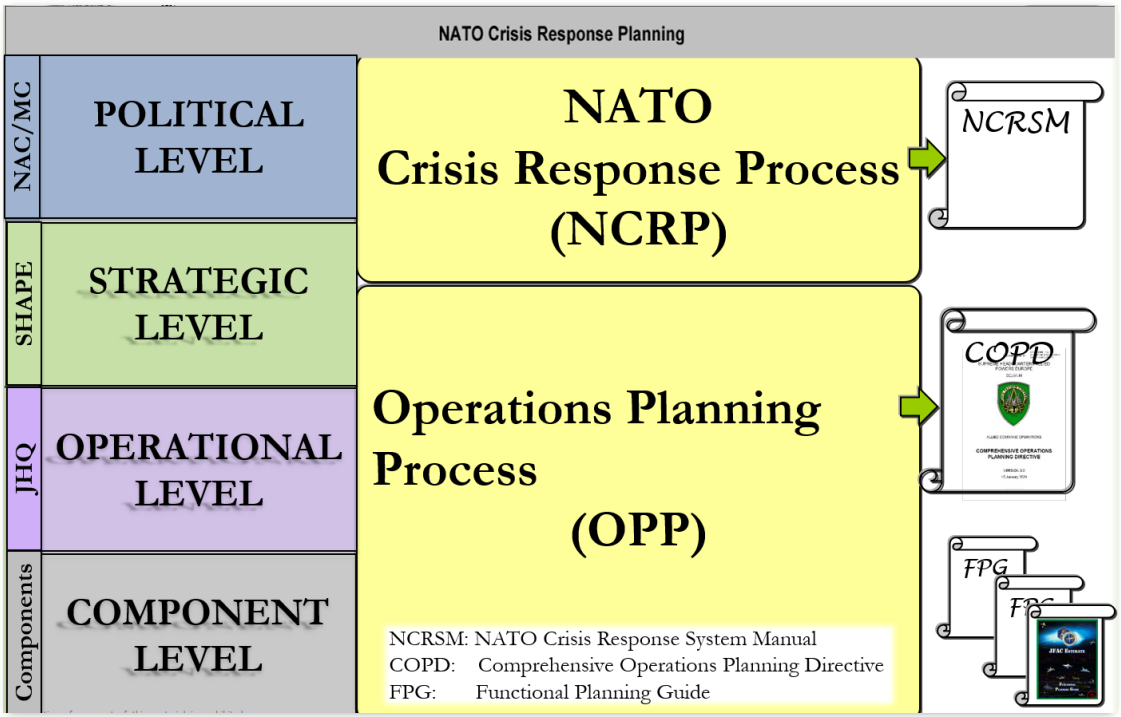
CCOMC: The Comprehensive Crisis and Operations Management Centre is the focal point for crisis and operations management at SHAPE.

7.6.2.2. **Operational Level**

COMJTF activates a JOPG to transform strategic direction into a scheduled series of integrated military actions. JOPG will be staffed by personnel from NCS COMJTF and single services command (NCS Land, Maritime and Air Command) to constitute the JHQ, and will be named JTF when activated. The COMJTF and the JOPG constitute the key elements of the operational estimate.

7.6.2.3. **Component levels**

COMJFAC, AOPG, COMMCC, COMLCC, COMSOCC, and OPGs of other CCs.



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7.7. Key material and guidance to start the JFAC estimate.

➔ *During the OPP, staffs are issueing the following materials and guidance in sequence.*

7.7.1. CUOE Awareness Brief

The **Comprehensive Understanding of the Operational Environment (CUOE)** is a process enabling the development of an initial understanding and monitoring of a crisis. It is crisis-specific cross-headquarters process, led by the intelligence/knowledge staff. The goal is to develop a comprehensive understanding of the operational environment covering land, air/space, maritime dimensions, as well as the PMESII systems of main adversaries, friends and neutral actors that may influence joint operations, including associated potential threats and risks, in support of the planning and conduct of an operation.

7.7.2. SACEUR Strategic Assessment (SSA)

With its assessment, SACEUR provides relevant military advice for the particular crisis/issue to the Military Committee (MC). SSA provides the NAC with:

A basic understanding of the nature of the crisis, including its key PMESII aspects.

An appreciation of the implications for NATO, including strategic risks and threats.

An appreciation of potential strategic ends, ways and means.

Military considerations relevant to the situation.

7.7.3. NAC Initiating Directive (NID)

Once an MRO is selected among the ones proposed by SACEUR, the NAC will promulgate a NID with the NATO mission statement.

7.7.4. Strategic Planning Directive (SPD)

JAPCC FPG: The **Strategic Planning Directive (SPD)**, based on SACEUR's intent, provides essential direction and guidance to COMJTF, and other supporting commands, to guide the development of the estimates at the joint and component levels.

7.7.5. COMJFAC initial Direction and Guidance (D&G)

Initial Commander's D&G allow the AOPG to commence mission analysis. Commander's guidance should include planning milestones, including specifically when the Commander will be available for the Mission Analysis Brief (MAB). An overview of COMJFAC initial D&G for planning can be found at the end of this FPG (See checklists).

7.8. Key material to continue the JFAC Estimate

7.8.1. Operational Planning Guidance (OPG)

The joint level issues an OPG to trigger formally the Mission Analysis at the component level. With appropriate staff preparation, COMJTF issues the OPG to capture the output from the Joint MAB (incl. initial operational design).

➔ *Air planners should consider the OPG outputs for the MAB presentation to COMJFAC.*

7.8.2. COMJFAC post MAB guidance

Following the presentation of the MAB, the COMJFAC should provide the AOPG with direction and guidance for the development of the courses of action. See PART A in the guide. Chapter "Component estimate Part 1".

7.8.3. Operational Planning Directive (OPD)

An Operational Planning Directive (OPD) is released to formally trigger COA development at the component level. With appropriate staff preparation, the Commander will issue an OPD to formally promulgate the output of the COA decision briefing including the refined COA, Commander's intent, final operational design, and CC missions. The JOPG should anticipate the Commander's requirement and begin to draft an OPD in parallel with preparations for the COA decision briefing, facilitating its rapid release following approval by the Commander of the refined COA and operational design.

7.8.4. COMJFAC Post COA DB guidance

Following the presentation of the COA DB, the COMJFAC should provide the AOPG with D&G for CONOPS development with the selected and amended, course of action.

➔ *See chapter "COMJFAC direction and guidance" of this guide.*

7.8.5. Supplementary Plan (SUPPLAN) or OPLAN air

A SUPPLAN is a supporting plan of the OPLAN developed by a component. It enables the component commander to outline the relevant activities of its component.

7.8.6. Air Operations Directive (AOD)

This is the COMJFAC directive for tactical units, C2 elements and JFAC HQ for a period of time, during the execution of an Air operation. It includes the Commander's intent, joint air apportionment, air PTL, and specific D&G for a focused period of time.

7.9. Air Operations Planning Group (AOPG)

An AOPG is a temporary group of planners activated by the COMJFAC and set up at a certain stage of the planning process, in order to support the COMJFAC in the decision-making process. Using the OPP specified in the NATO Directive (COPD), the AOPG analyses both the environment and the mission to provide the Commander with a series of appropriate courses of action for selection. An AOPG is a practical and flexible team; put into action to deliver a coherent plan having been attributed a complex situation.

7.9.1. Usual NATO prerequisites

When politicians have failed with diplomatic solutions to resolve a crisis, they turn to the use of military force. In a scenario where NATO is asked to offer forces to intervene and when agreed upon, the NAC decides that NATO will conduct said operation.

At this stage, political issues have been identified and some resolutions may be released by the United Nations to express disagreement/condemnation.

During the first 2 phases of the OPP, the CUOE process is ongoing. the force-contribution-process has started with the VJTF and NRF involvement; the Joint Task Force Commander (COMJTF) have issued their initial advice and the Joint Operations Planning Group

(JOPG) has started its works and drafted the COMJTF's initial D&G into a general scheme of manoeuvre of the operation, called the Operational Planning Guidance (OPG).

➔ *AOPG ideally requires (initial doc.): SSA, SPD, CUOE Brief and, at a minimum, COMJFAC initial guidance.*

7.9.2. AOPG activities and COMJFAC interaction

The AOPG director is responsible for informing the Commander of issues that may conflict with his/her vision or for raising any other important issues that may have an impact on the working process or require clarification at higher levels.

➔ *This is a bilateral work between the AOPG and the COMJFAC,*

The AOPG must address critical issues with the commander's vision,

COMJFAC must select a COA, based upon experience and AOPG recommendations.

The COMJFAC should be involved at any time in the process to be informed on key issues and to be able to provide relevant advice to COMJTF for the employment of air forces. During the process, COMJFAC should be informed of any risk of not having sufficient resources for the operation prior to SUPPLAN approval.

7.9.3. AOPG composition

➔ *The composition of the AOPG depends on the specific needs of the operation to be planned.*

➔ *Usually, the core of the AOPG consists of members from a standing JFAC augmented with specialists and liaison officers from other forces.*

Other than the AOPG director and AOPG coordinators, which manage the group through the process, an AOPG is comprised of:

Planners (Core JFAC) to lead JFAC estimate and assessment development;

Functional SMEs (depending on the mission requirements): AEW, ISR, AAR, PR, IAMD (AD, SBAD), Bombers, Targeters, ICC DBM, Airlift, Log planners and Movers, Intelligence pers., Information operations, TDL, Space, Airspace controllers, CIS specialists, FP, CBRN, Cyber…

Advisors (LEGAD, POLAD, MEDAD) and Liaison Elements (other CCs).

7.9.3.1. AOPG Director and coordinator(s)

The AOPG director leads the group and is the point of contact for the COMJFAC. They are to seek COMJFAC guidance when required and provide the commander with any relevant issues to be raised up to the COMJTF.

The AOPG coordinator(s) role is to manage the group, the battle rhythm of the planning activities and the component estimate as it relates to the operational estimate.

NOTES

PART B– JFAC ESTIMATE/ MISSION ANALYSIS

Mission analysis inputs and outputs

Key inputs	Steps	Key outputs
• SPD • COMJTF mission & intent • COMJFAC's initial guidance • Friendly situation • CUoE, OPG • JOPG Key Factors & assumptions • COMJFAC ~~tasks~~ initial Direction and guidance	**Mission Analysis**	• COMJFAC Mission statement and intent • Factors analysis • CoGs (Centres of Gravity) • Limitations • Assumptions • Risk analysis • COR (Critical Operational Requirements) / CCIR • Initial Operations design
• MAB	**COMJFAC approvals**	• Approved Misison statement • Approved COMJFA intent • Approved JFAC Operations design

Mission Analysis is primarily about developing a full understanding of the operational environment (OE), Higher HQ guidance, and articulating what is to be accomplished in support of the overall mission. The JFAC mission statement, the COMJFAC intent and the initial JFAC operations design are key products.

However, as depicted below mission Analysis entails much more:

1. Review planning guidance
   1.1. higher headquarters' planning activities and strategic guidance
   1.2. Review COMJFAC's initial planning guidance
2. Factors analysis
3. Centres Of Gravity
4. Determine limitation of the COMJFAC's freedom of action
5. Develop planning assumptions
6. Identify JFAC specified; implied, and essential tasks
7. Develop COMJFAC mission statement
8. Develop COMJFAC critical operational requirements
9. Develop COMJFAC risk assessments
10. Develop COMJFAC intent Statement
11. Identify Decisive conditions (DC)
12. Develop the Operational Design (OPS Design)
13. Conduct initial force allocation review, critical timing, capabilities and C2 requirement
14. Prepare and present a COMJFAC mission analysis brief
15. If necessary,refined MAB after COMJFAC input

1. REVIEW PLANNING GUIDANCE

1.1. Review higher HQ's planning activities and strategic guidance

Examine all NATO, SACEUR and COMJTF guidances (OPG) to include strategic communications, warning orders, planning orders, JOPG feedback

Directives should provide specific guidance to include a description of the situation, purpose, objectives, anticipated mission or tasks, and pertinent limitations.

- ⇨ If available, analyse the COMJTF's operational approach to gain an appreciation for their understanding and visualization of the problem.

This provides a basis for detailed analysis of the Operational Environment. It is critical to understand the COMJTF's mission, JOA boundaries, and the WHY of the mission.

Most importantly, understand the air component role in COMJTF's mission, intent & vision.

1.2. Review COMJFAC's initial planning guidance

COMJAF will provide guidance based on Commander's conversation with COMJTF, Staff and other components Commander. This document will highlight areas of effort for the Air component involvement in the combined mission. It could also provide the following:

- Update on forces available for planning
- Other capabilities available (multinational forces/organization/interagency support)
- The political situation (host nation, friendly/foreign governments, etc.)
- Time allocation. Balance the desire for detailed planning against the need for speed (MAB and DB design timing for AOPG products).

2. FACTORS ANALYSIS

2.1. Definitions

Fact: a significant factual statement of information known to be true and that has tactical implication (that is relevant to air component planning).

Deduction: The implications, issues or considerations, derived from fact(s) that have **tactical significance.** It should lead to a set of logical conclusions. It may be necessary to continually review some deductions throughout the process as things may evolve unexpectedly.

Conclusions: They are drawn from deductions and represent the outcome or undesired result that requires action in planning or further analysis (Tasks, Limitation, Critical requirements, CCIR, Risk..).

They must be relevant and useful in determining JFAC requirements and specific operational conditions that must be established with respect to forces, time and space.

Key factors: Factors influencing the crisis and its likely causes, as well as changes required to improve the overall situation. These 'key factors' will typically relate to the identified (specified or implied) 'unacceptable conditions' in the operating environment. Facts that help defining the problem and which must ultimately be addressed when resolving it.

2.2. Factor analysis and the OPP

As the first step of the mission analysis, Factors analysis should serve as a basis for further development.

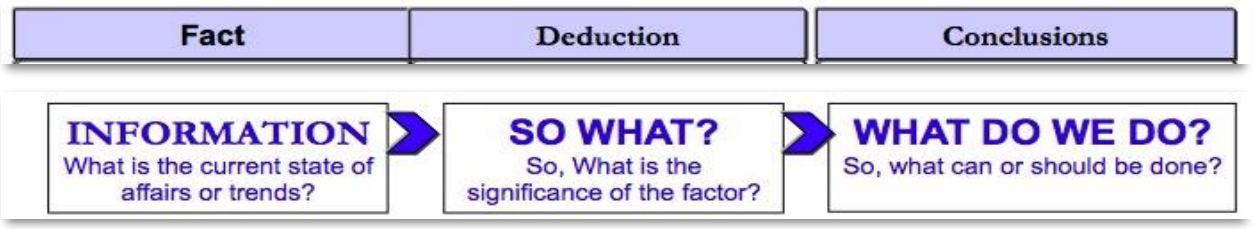


Fig B.2.1 – Factors analysis matrix

➔ *All actors/groups of actors and the environment are analysed to determine the Key Factors to be presented to the COMJFAC during the MAB.*

2.3. Factors Analysis process

With a broad understanding of the operational environment provided by the CUoE briefing, the AOPG must examine specific aspects, facts or conditions and the capabilities, goals and relationships between actors to determine possible impacts on air operations success. The AOPG should also consider the effects of the operational environment.

➔ *Planners should assess the relevance of these facts to the air component.*
➔ *Deductions must be concise, relevant and expressed as building blocks of information.*
➔ *Conclusions should be air component focused.*

2.3.1. Domains of assessment

For each main actor or group of actors the AOPG should :

- analyse the operational environment factors from the CUoE,
- understand the opportunities, threats, operational limitations and other considerations that affect the execution of Air Operations,
- consider the impact of time, space, forces and all other aspects on air operations.

2.3.1.1. Impact of time

AOPG should consider "Time" as it affects the development of courses of action.

➔ *Speed is a critical characteristic to air activities that planners should consider.*

2.3.1.2. Impact of space

The following considerations should be explored when elaborating on the space domain: spatial, geographical, meteorological, airspace (vertical and horizontal boundaries), impact to joint air operations, resources, basing, etc…

➔ *AOPG should consider how battle space configuration could affect joint air operations.*

2.3.1.3. Impact of forces

When planners have an initial force package for planning, it is critical to assess them as well as the Order of Battle (ORBAT) of others involved.

➔ *When information or intelligence is missing, it is critical to develop RFIs (Requests for Information) of friendly forces or PIR (Priority Intelligence requirements) of the enemy.*

A question matrix is useful to assess the impact of forces.

2.3.1.4. Impact of other domains

Other domains are included under PMESII (Political, Military, Environment, Social, Infrastructure, and Information). It is critical to analyse an actor from that angle with a lens towards its impact to the air operation as well as course of action development.

2.4. Factors analysis outcomes

2.4.1. Key factors and conclusions

The main outcome of the factors analysis will require actions or planning guidance for further development. Usig an excel matrix to gather the information enable efficient sorting for further mission analysis requirements.

Conclusions should be relevant and useful in determining military requirements and specific operational conditions that must be established at the air component level.

➔ *Conclusions should be categorised to facilitate their future use during planning and course of action development. See following paragraph for the list of categories.*

From this tool, the AOPG will identify **key factors** to be highlighted to the COMJFAC.

➔ *This selection is based upon COMJFAC initial guidance, planners experience and when the drawn conclusions lead to major risks or critical requirements (Forces, C2, Log., Protection, Branch Plan…)*

➔ *It is critical to review the syndicates' work before the next step. This review is also an opportunity for everyone to have a comprehensive understanding of the overall factors analysis outcome.*

2.4.2. Categorising conclusions

➔ *Key issue as conclusions are the basis for further planning activities*

The conclusions can be tagged according to the following categories:

AS - **Assumption**: Information based on an educated guess that is made in order to continue planning, where gaps in knowledge and information may be revealed.
Example: Actor Z will remain neutral. ➔ *Never make assumptions about the enemy.*

BP - Branch Plan: A plan for an alternative direction required under specific conditions.
Example: Counter offensive before D+20

CC - Critical Capabilities: Primary ability to gain and maintain dominant influence over an opponent or a situation. *Examples: Detect Actor Y air assets; Provide RAP.*

CCIR - Commander's Critical Information Requirements: A critical operational requirement for the commander to make timely decision. CCIR are made of PIR and FFIR.
Example: SCUD attack on country X; loss of a JFAC capability.

CR - Critical Requirements: specific conditions, components or resources that are essential to sustain a critical capability. *Example: AEW; RDRs*

CV - Critical Vulnerability: weaknesses, gaps or deficiencies in the key system elements and essential conditions, characteristics or capabilities.
Example: Lack of AEW, RDRs detection hampered by mountains

DC - Decisive Condition: specific sustainable conditions deemed critical to gaining or retaining freedom of action or achieving an objective. *Ex:Force defensive capability IOC.*

DP - Decision Point: In the estimate process, an option that will accomplish or contribute to the accomplishment of a mission or task, and from which a detailed plan is developed.
Ex: Actor X attacks actor Y before D+20

LC - Limitation-constraint: A requirement placed on a commander that dictates action
Ex.: Use YY base as pre-deployment base.

LR - Limitation Restraint: A requirement placed on a commander that prohibits action
Ex: No cross border before D+30

PG - Planning Guidance: Any additional guidance to planners for COAs development or to be considered for the plan development.
Ex: Include SCUD in TST matrix; prioritise the deployment of SBAD

PIR - Priority Intelligence Requirement: Gap of information on the enemy activity or ORBAT. PIR is a category of CCIR. Identifying a PIR should conduct to questions to the higher level. - *Ex: SCUD location or SCUD attack capabilities.*

RFI - Request For Information: A request to JFAC external entities in order to fill a gap of information. *Ex: Location of IDP (Internal Displaced Pers.) camps in actor Y?*

RISK - Risk: possibility and consequences of failing to achieve an action. Consider risk to the mission and risk to the force. *Ex.: SCUD launch against JFAC DOBs/APOD*

SOR - Statement of Requirement: An operational requirement to be submit to higher level. - *Ex.: 7 AEW a/c; 4 SBAD battalions*

SPT - Support and Resources requirements: military requirements, sustainment and Joint support required to accomplish the mission. Those requirements include logistics, medical, POL, HNS, human resources aspects *Ex.: HNS for POL on DOBs*

T - Task: An action for air units. - *Ex: Deploy GBAD in Country XX*

NOTES

2.4.3. **Example**

Enemy factors analysis / Force domain

FACTS	DEDUCTIONS	TYPE	CONCLUSION
1. Enemy actor Y is equipped with SCUD B	1.1. Actor Y may use it against cities of Friendly actor X.	Risk	1.1.1. Enemy use SCUD against HN Cities
		CCIR	1.1.2. use of SCUD against HN cities
		T	1.1.3. Deploy TBMD asset around cities
		T	1.1.4. Protect cities
		PG	1.1.5. include HN main cities into JPCAL
		PG	1.1.6. include SCUD B in TST matrix
		CC	1.1.7. Ability to protect Actor X cities
		CR	1.1.8. TBMD assets
		CV	1.1.9. Insufficient nbr of TBMD assets
		SOR	1.1.10. need for XX TBMD assets
		SPT	1.1.11. TBMD assets require LOG
	1.2. JFAC location may be under the threat depending on their location in Country X	Risk	1.2.1 Enemy use SCUD against DOBs
		CCIR	1.2.2. use of SCUD against DOBs
		T	1.2.3 Deploy TBMD around APOD/DOBs
		PG	1.2.3 include APOD/DOBs in JPCAL
		PG	1.2.4 include SCUD B in TST matrix
		PG	1.2.5 prioritise deployment out of SCUD range
		CC	1.2.6 Ability to protect APOD/DOBs
		CR	1.2.7. TBMD assets
		CV	1.2.8 small Nbr of TBMD assets
		SOR	1.2.9. XX TBMD assets

"Enemy actor Y is equipped with SCUD B" is a Key factor ➔ different conclusions highlight the risk they may pose and it is requiring specific assets to counter it.

FACTORS ANALYSIS CHECKLIST

A- Prerequisites

Materials required: CUoE Brief, SSA, SPD, COMJFAC guidance and, when issued, OPG.

B- How to proceed

1 Split the AOPG into syndicates, each focusing on one actor (or group of actors)

2 Split your syndicate into groups focusing on Time, Space, Forces, Others aspects.

NB: The group in charge of Allied forces assesses the impact of Time, Space, Forces and Others aspects on the JFAC mission when provided.

3 Review the materials (SSA, SPD, CPOE, OPG) and identify the facts. Use the following questions to identify potential factors to analyse amongst the 4 domains.

1- Impact of time

- ⇨ What are the time imperatives for the deployment and employment of forces?
- ⇨ What are the likely consequences of current trends in the crisis compared to NATO's capability to project forces into the area?
- ⇨ What are the operational risks / opportunities if unable to achieve time imperatives?
- ⇨ Is there a point in time when a specific condition will be decisive for the success or failure of the operation?

2- Impact of space

- ⇨ Are the lines of communication into and within the theatre adequate, secure and sustainable?
- ⇨ Can key terrain and vital areas be effectively secured and what are the risks if they cannot be?
- ⇨ Are our required operating areas within the operational reach of enemy forces?
- ⇨ What are the implications of deploying forces to required operating areas in terms of speed, mobility, vulnerability, supportability and control?
- ⇨ Are there critical areas where conditions will decide on the success/failure of the operations?

3- Impact of forces

- ⇨ Are the force capabilities and capacities ready to meet mission requirements?
- ⇨ Can the required force capabilities be projected and prepared for employment to required operating areas within the required time scale?
- ⇨ Can the necessary force capabilities be sustained in required operating areas?
- ⇨ What are the risks to the force and the mission?

4- 3.4 Impact of other domains

Political

- ⇨ What interests of the adversary or other nations are at stake in the conflict?
- ⇨ Is adversay willing to use force?
- ⇨ Which nations are allied with or supporting the adversary? What degree of support?
- ⇨ Are any resolutions pending?
- ⇨ Has a "host" nation asked for assistance?
- ⇨ Does NATO have other commitment to affected nations
- ⇨ Which nations are allied with or supporting the adversary? To what degree of support?

Economic

- ⇨ What are adversary/sub-group or adversary-supporting nations economic interests?
- ⇨ What are the economic interests of any third parties?

Military

- ⇨ What NATO forces/capabilities are available or identified? Deployment times?
- ⇨ What are the military capabilities of the host nation? Have they trained with NATO forces? Do they have similar/compatible equipment?
- ⇨ What bases have been/might be offered for use? Are base infrastructures and C2 nodes available?
- ⇨ What are the AD and Air Base defense capabilities of the host nation?
- ⇨ What are the potential threats to our forces in each of the beddown countries? Are air/airbase defense capabilities adequate?

Social

- ⇨ How supportive are the people of the adversary country/ the host nation of using force to achieve their interest?
- ⇨ What must the adversary/host nation/NATO leadership do /avoid to retain populace support in the conflict?

Infrastructure

- ⇨ What bases could serve as APODs/DOBs?
- ⇨ Are there any hangars/hardened aircraft shelters that might be made available for NATO force?
- ⇨ Is the C2 of air forces supportable?
- ⇨ Does the host nation have a robust or limited communications infrastructure?
- ⇨ From what location the COMJTF will direct the NATO operation?
- ⇨ Does the adversary utilize open/djspersed aircraft hangars or hardened aircraft shelters?
- ⇨ What is the cyber, IO, and Space status of host nation and adversary? Vulnerabilities?

Information

- ⇨ Is the StratCom policy sufficiently robust for the mission?
- ⇨ Are global and local communication links sufficient to support the information strategy?
- ⇨ What relevant NATO forces, host nation, or adversary public statements have been made?

4 Make **deductions** about mission implications relevant to the JFAC

5 Draw **conclusions** related to the mission requirements that must be addressed in planning and/or in further analysis and categorise them (tag) in the Excel matrix.

- ⇨ For each deduction try to provide answers to the following questions. When providing an answer, use the categorie stated after the questions to tag your answer.

1- Is the JFAC / the protected country under a threat? Do our actions potentially have undesired effects? Is a JFAC capability subject to loss/threat? ➔ **Risk**

2- Is that risk critical so that when happening, one is to alert ASAP the COMJFAC? ➔ **CCIR (**Commander's Critical Information Requirements**)**

3- Is the COMJFAC to decide something regarding this CCIR? ➔ (**DP**) / (**BP**)

4- What can we do regarding this fact? ➔ **(T) Task**

5- Do we need to add Planning Guidance for the AOPG? ➔ **PG**

6- What Critical Capability do we want to implement? ➔ (**CC**)

7- Which critical assets do we need to sustain a critical capability? ➔ (**CR**)

8- Do we have sufficient number of assets or are they well protected? ➔ (**CV**)

NB: vulnerability + Assets required ➔ (**SOR**) Statement of requirement

9- Do we require specific support for these assets (medical, logistics, maintenance, POL, HNS,etc.? ➔ (**SPT**) Support and Resources requirements

10- Is there any limitations posed on the JFAC/COMJFAC freedom of action regarding the fact or deduction? ➔ (**LC**) / (**LR**)

11- Do we have a gap in the information / intelligence? ➔ (**RFI**) or (**PIR**)

12- Can we make a reasonable Assumption to fulfil this gap of information (NB: no assumption on enemy)? ➔ (**AS**)

6 Select among the facts the ones that are critical for the success of the air operation or the achievement of the mission. They are the **KEY FACTORS**: COMJFAC requires a presentation of the critical factors for decision-making;

7 Do a rehearsal presentation of these key factors with their conclusions to check for their relevance to the MAB and to share a comprehensive understanding of the different actors within the AOPG.

8 Create the "key factors" slide(s) for the **MAB**.

3. CENTRE OF GRAVITY (COG)

3.1. CoG and definitions

Centres of Gravity (COG): Characteristics, capabilities or localities from which a nation, an alliance, a military force or other groups derive its freedom of action, physical strength or will to fight (AAP 6).

Source of power that provides moral or physical strength, freedom of action, or will to act. In order to have a complete Operational Design you must analyse adversary and friendly COGs (USAF JOPPA).

➔ *Proposed simple definition:* *"A system source of power to act towards one's aim"*

Critical Capability (CC): Crucial enabler that allows a COG to remain a COG. Critical Capabilities are essential to the achievement of objectives.

Critical Requirement (CR): Conditions, resources and/or means that enable full operability of a CC.

Critical Vulnerability (CV): The aspects or components of a CR that are deficient or vulnerable to direct or indirect attack. Attack of a Critical Vulnerability will destroy the COG leading to decisive or at least significant results.

<table>
<tr><td colspan="2">ACTOR: main goal and desired outcome
What is the actor's main goal and what conditions do they seek to achieve with their actions?</td></tr>
<tr><td>Centre of Gravity
…source of power to act
A noun; an entity; a complex system; a thing</td><td>Critical Capabilities
…abilities to generate force or persuasion
What are the primary means that enables the COG to gain/ maintain dominant influence over an opponent or situation, such as to threaten or coerce and opponent, or to control a population, wealth distribution, or a political system?</td></tr>
<tr><td>Critical Vulnerabilities
…exist when a critical requirement is deficient, degraded or missing and exposes a critical capability to damage or loss
What are the weaknesses, gaps or deficiencies in the key system elements and essential conditions, characteristics, capabilities, relationships, specific resources or influences through which the COG may be influenced or neutralised?
➔ A noun with modifiers</td><td>Critical Requirements
…specific conditions, components or resources that are essential to sustaining those capabilities essential conditions, resources and means
What are those key elements, essential conditions, characteristics, capabilities and influences required to generate and sustain the COG's critical capabilities, such as specific assets, physical resources, or relationships with other actors ➔ Nouns, things</td></tr>
<tr><td colspan="2">Conclusion: key elements of the CoG analysis.
Which weaknesses, gaps or deficiencies in the key system elements and essential conditions, characteristics, capabilities, relationships, specific resources or influences could be exploited to change the capabilities and behaviour of the actor and improve conditions in the operational environment? decisive conditions, effects, actions, ROE (to prevent undesired states and effects), CCIRs, etc.
(RED CV → DC for offensive actions) (BLUE CV → DC for defensive actions)</td></tr>
</table>

Fig 9.1 Centre of Gravity Matrix (AO COE matrix)

NOTES

3.2. CoG and planning process

3.2.1. CoG and Operational planning process

The essence of operational art is described as follows:

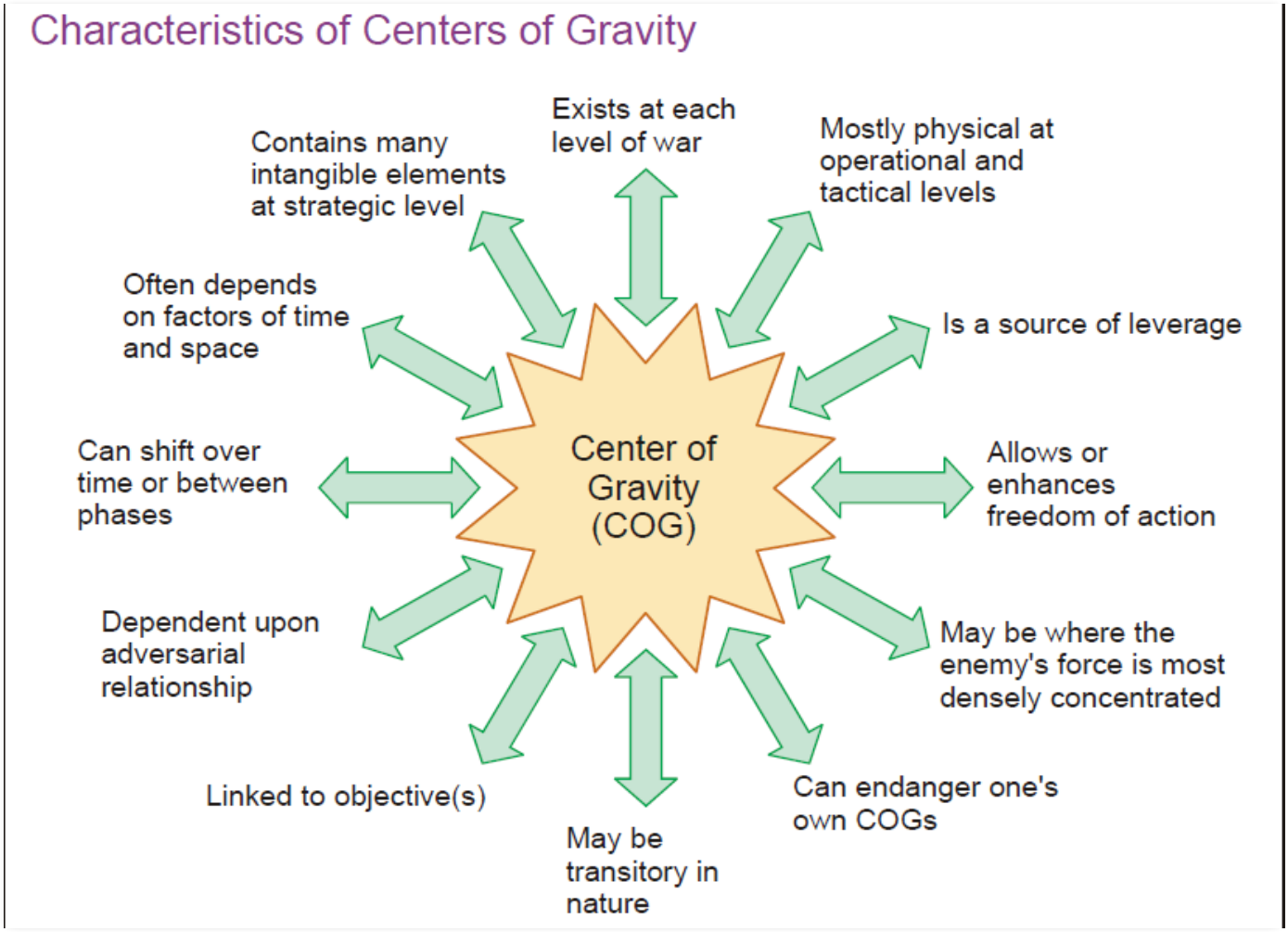
Identify the enemy's centre of gravity and neutralise it. ➔ *Get it right* ➔ *you win*

Identify your own centre of gravity and protect it. ➔ *Get it wrong* ➔ *you lose*

➔ *Identifying the COG is the most important task for planners and should not be determined haphazardly.*

Faulty analysis of a friendly or enemy CoG may have very serious consequences:

- Inability to accomplish military objectives at an acceptable cost,
- Unacceptable expenditure of lives, time and/or materiel that do not produce decisive strategic or operational results.



All energy can and should be directed against the CoGs.or its vulnerabilities.

The neutralisation of the enemy's CoG leads to the realisation of the objective and is a prerequisite for negotiations on favourable terms. A COG is directly derived from the aim or desired outcome of the actor, therefore:

An actor's COG may change during an operation if their objectives or available source of power change;

Different COGs can be considered in different operational phases;

COGs exist at different levels of operations.

COPD dictates that planners must consider limiting to:

- one actor's Strategic COG for the operation
- one actor's Operational level COG per phase.

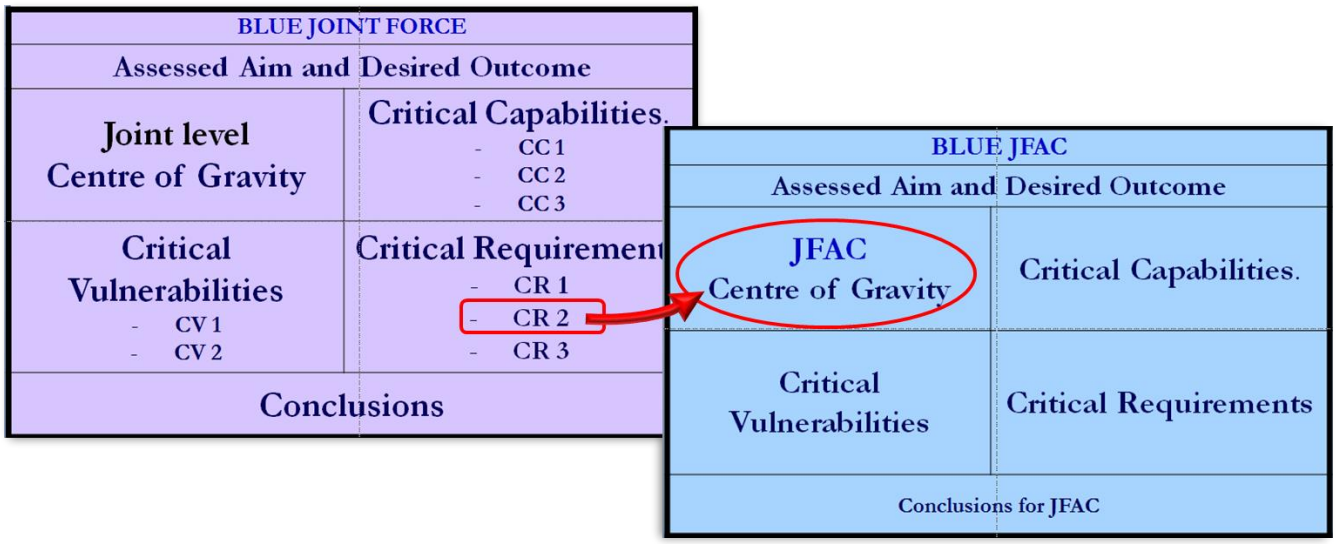
3.2.2. CoG and Component estimate

CCs supports the JTF HQ during planning. The development of CoGs at the component level are limited to own forces. For other actor's CoG, the component will analyse the CoG developed by the JOPG to determine how to influence the Critical Vulnerabilities with air assets or processes.

➔ *For the JFAC, the CoG should be a Critical Requirement of the joint level CoG.*

At the component level, planning staff should analyse the operational level CoGs to assess their vulnerabilities to opposing force attack in order to provide elements for their protection (own vulnerabilities) or focus on them for attack (enemy vulnerabilities).

➔ *It is nevertheless critical to understand how to develop a CoG, to be able to assess the one developed by higher level of command, and propose amendments.*



NOTES

3.3. CoG development process

3.3.1. Actors to be analysed

Each actor/system of actors is to be considered when determining or analysing the CoGs.

3.3.2. Process for CoG development

Focusing on one actor/group of actors, planners should determine their aim or desired outcome, which is the goal of the COG.

This system or actor has a **source of power** to act towards this aim.

➔*This source of power is the Centre of Gravity (CoG).*

Sources of power possess abilities to generate force, persuasion or ability to gain and maintain dominant influence over an opponent or a situation in order to establish the aim and desired outcome of the actor.

➔ *These abilities are Critical Capabilities (CC).*

Essential conditions, resources and means are enablers or elements that sustain the COG to be fully operative.

➔ *These enablers are Critical Requirements (CR).*

These requirements may have weaknesses, deficiencies and vulnerabilities.

➔ *They are known as the Critical Vulnerabilities (CV).*

Planners should exploit opportunities within vulnerabilities as conclusions for the JFAC.

➔ *These conclusions will become new tasks or DCs for the component.*

3.3.3. CoG validity test

In order to validate a CoG, planners should test their character and aptness to be a CoG.

Character of a CoG:

- Is it a dominant characteristic?
- Does it provide power to achieve the objective or the aim of the actor?
- Does it provide resistance against opposing objectives?

Aptness of a COG, with "Does/Uses" test (See Checklist for CoG).

3.4. Component analysis of a Joint CoG

When analysing the Joint CoG, the AOPG should consider the CV to be able to identify the ones to be influenced or targeted by the Air component. The AOPG is then to provide air component conclusions: the air tasks to influence or target the CoG CV.

➔ *Those conclusions should consist of air component contribution to the collapse/the protection of the CoG developed by the JOPG.*

CoG examples

3.4.1. Generic examples of CoGs

The following are often centres of gravity at joint level:

Joint forces; Nuclear forces; Land power; Sea power; Air power; Special ops forces; Unconventional forces, including terrorists; State security forces; Specific units.

The following are often centres of gravity at the air component level:

C4ISR; Efficient Air defence system; Robust Air C2

3.4.2. Mistaken CoGs

The following are things often mistakenly identified as centres of gravity:

- ✓ *The will of the people.*
  ➔ *This might be a requirement. If the will creates a force, the force could be a COG.*
- ✓ *Leadership/key personality.* ➔ *This is just another potential requirement. (Churchill still needed military force to enact his will).*
- ✓ *Airports or seaports of debarkation.*
  Is the Port of Pusan the force holding back the North Korean Army?
- ✓ *Strategic mobility.* ➔ *This would make FedEx a centre of gravity.*
- ✓ *Lines of communication.*
  ➔ *Lines of communications are just the rails of the railroad which needs of a locomotive.*
- ✓ *Resources.* ➔ *By themselves, resources are not COGs. The COG would be the control of the resource market. Otherwise resources might be requirements for a COG.*
- ✓ *Time* ➔ *Time is perhaps a requirement, or even a strategy, but you can't try to stop your opponent by calling a time out.*
- ✓ *The media.* ➔ *The media is a tool to influence the will of the people and key leaders, which is only a requirement.*
- ✓ *Coalition/allies* *Coalition partners or allies might be required to bring or add to the real COGs [military or economic might]."*

Reference: CoG Analysis by Colonel Dale C. Eikmeier, US Army, 2004.

CENTRE OF GRAVITY CHECKLIST

A- Prerequisites

Factors analysis conclusions, CPOE (actors or system of actors to analyse), CoGs developed by the JOPG.

B- How to proceed

Due to the situation, you may develop a CoG from scratch or develop JFAC CoG from Joint Forces CoG (see. B.2) or analyse a joint CoG with air vision (see B.3).

B.1 CoG development from scratch

1. Split the AOPG into syndicates, each focusing on one actor (or group of actors)
2. Select one actor/ system of actors. Planners must think with a "Joint" mind set.
3. Express clearly the aim / desired Outcome. Answer the following question:
   - ⇨ What is the actor's main goal and what conditions he seeks to achieve by its actions?
4. Sort the CC, CR and CV from the factors analysis excel matrix. Those elements constitute a basis but they are not the final outcome of this analysis.
5. Determine the required Critical Capabilities (CC) to have the CoG acting towards the actors' aim. Write them with a verb: the ability to…
   - ⇨ What are the primary means or functions that enable the COG to gain and maintain dominant influence over an opponent or situation, such as to threaten or coerce an opponent, or to control a population, wealth distribution, or a political system? (to be influenced/denied to an opponent and exploited in a friend)
6. Identify the Critical Requirements (CR): those specific conditions, components or resources that are essential to sustain those capabilities.
   - ⇨ What are those key system elements and essential conditions, characteristics, capabilities and influences required to generate and sustain the COG's CC such as specific assets, physical resources, or relationships with other actors.
7. Identify Critical Vulnerabilities: it exists when a critical requirement is deficient, degraded or missing and exposes a critical capability to damage or loss. Express is by a noun with modifiers.
   - ⇨ What are the CR that are vulnerable to attack or disruption?
   - ⇨ What are the weaknesses, gaps or deficiencies in the key system elements and essential conditions, characteristics, capabilities, relationships, specific resources or influences through which the COG may be influenced or neutralised? (to be attacked in an opponent and protected in a friend)
8. Identify the actor Critical Capabilities' source of power, which is the actor COG.
   - ⇨ What is the primary element of power upon which an actor depends to accomplish his operational objectives (to be targeted in an opponent and protected in a friend)

9 Express the conclusions about the vulnerabilities: actions verbs or forces requirements to face the vulnerabilities.

⇨ What to do to exploit the CV of the enemy or deny its CR?
➔ *To degrade a CR, use C2 or information operations; to reduce its power, use attrition.*

⇨ What to do to protect our own CV or to secure our own CR?
➔ *To protect a CR, reinforce it and to defend it, provide it with assistance.*

10 Aptness of a COG.

⇨ Assess the aptness of the CoG with the following test.

⇨ If the test has failed for one question, you may challenge the designated CoG.

DOES (Yes=OK for COG aptness)
A- Does designated COG action is to gain and maintain dominant influence over an opponent or situation?
B- Is/Are designated COG the source of power to gain and maintain dominant influence over an opponent or situation?
C- Can you defeat designated COG by weakening/destroying determined specific conditions, components or resources (CR)?
USES (No=OK for COG aptness)
D- Is designated COG used/consumed by another entity to be able to gain and maintain dominant influence over an opponent or situation?
E- Does/Do designated COG contribute to gain and maintain dominant influence over an opponent or situation without participating directly in the action?

B.2 - JFAC CoG development from Joint CoG (only for Own Forces)

1 The group in charge of the "NATO" actor is to review the CoG matrix developed (joint level) and brainstorm with a JFAC mindset to develop the CoG.

2 State clearly the aim/desired outcome of the JFAC in support of the joint level aim.

⇨ What is the JFAC's main goal and what conditions are to be achieved by its actions?

3 Sort CC, CR and CV from the factors analysis matrix. Those elements constitute a basis for further development but they are not the final outcome of this analysis.

4 Determine the required Critical Capabilities (CC) to have the CoG acting towards the JFAC's aim. Write them with a verb: the ability to… *Ex.: detect enemy air assets*

⇨ What are the primary means or functions that enable the COG to gain and maintain dominant influence over an opponent or situation, such as to threaten or coerce an opponent, or to control a population, wealth distribution, or a political system? (to be exploited for the air component)

5 Identify the Critical Requirements (CR): those specific conditions, assets or resources that are essential to sustain those JFAC capabilities.

⇨ What are those key system elements and essential conditions, characteristics, capabilities and influences required to generate and sustain the COG's CC, such as specific assets, physical resources, or relationships with other actors.

6 Identify Critical Vulnerabilities (CV): it exists when a JFAC critical requirement is deficient, degraded or missing and exposes a critical capability to damage or loss. Express is by a noun with modifiers.

⇨ What are the JFAC CR that are vulnerable to attack or disruption?

⇨ What are the weaknesses, gaps or deficiencies in the key system elements and essential conditions, characteristics, capabilities, relationships, specific resources or influences through which the COG may be influenced or neutralised? (to be protected)

7 In order to identify the CoG, review the Joint CoG CR and try to determine the one that could be considered as the JFAC CoG.

⇨ What is the primary element of power upon which an actor depends to accomplish his operational objectives (to be targeted in an opponent and protected in a friend).

8 Express the conclusions about the JFAC vulnerabilities: actions verbs or forces requirements to face the vulnerabilities.

➔ *NB: To protect a CR, reinforce it and to defend it, provide it with assistance.*

9 Aptness of a COG.

Assess the aptness of the CoG with the tests at chapter 22.2.1

B.3 AOPG analysis of Joint CoG

1 Split the AOPG into syndicates, each focusing on one actor (or group of actors)

2 Syndicate leader briefs its team on the work to perform and the required issue.

3 Review the CoG matrix developed at Joint level.

4 Challenge the Critical Capabilities (CC) against Air component capabilities to enable the Actor's objectives.

5 Challenge the Critical Requirements (CR) against Air component assets and propose CR for any new CC developed during the previous step.

6 Challenge the CV against Air component assets/infrastructures deficiencies or vulnerabilities. Identify potential CV for new CR developed (previous stage).

7 If new CC, CR or CV developed; AOPG is to push this improvement to the JOPG.

8 Identify Critical Vulnerabilities: it exists when a critical requirement is deficient, degraded or missing and exposes a critical capability to damage or loss. Express is by a noun with modifiers.

- ⇨ What are the CR that are vulnerable to attack or disruption?
- ⇨ What are the weaknesses, gaps or deficiencies in the key system elements and essential conditions, characteristics, capabilities, relationships, specific resources or influences through which the COG may be influenced or neutralised? (to be attacked in an opponent and protected in a friend)

9 Express the conclusions about the vulnerabilities: actions verbs or forces requirements to face the vulnerabilities.

- ⇨ What to do to exploit the CV of the enemy or deny its CR?
  - ➔ *To degrade a CR, use C2 or information operations; to reduce its power, use attrition.*
- ⇨ What to do to protect our own CV or to secure our own CR?
  - ➔ *To protect a CR, reinforce it and to defend it, provide it with assistance.*

C- CoG outcome

The filled formatted matrix to be presented to the COMJFAC during Mission Analysis Brief with a highlight on the conclusions for the Air component.

4. LIMITATION OF THE COMJFAC'S FREEDOM OF ACTION

4.1. Definitions

Constraints (Things the JFAC must do): Requirements placed on the COMJFAC by a higher command that dictate an action:

- Law (LOAC, other…)
- Mandate (UNSCR, …)
- Diplomatic agreements
- Political or economic conditions in affected countries
- Host nation
- NATO political or military authorities
- Higher command

Restraints (Things JFAC cannot do): Requirements placed on the COMJFAC by the COMJTF or SACEUR that prohibit an action

Restrictions that limit the commander's freedom of action

4.2. OPP and operational limitations

The AOPG should identify limitations to COMJFAC's freedom of action in its ability to accomplish the mission. This will shape the framework for the courses of action.

Limitations are made of constraints and restraints drawn from outside entity requirements or rules. However, they may also be drawn from factors analysis conclusions, when outcomes dictate time, place and forces to be used. The review of factors analysis will be conducted to identify specific limitations to the JFAC.

➔ *The AOPG should compare limitations with other outcomes of mission analysis (Risk, CCIRs, assumptions) as they may interact or pose changes to the development of the plan.*

4.3. Examples of Limitations

4.3.1. Constraints

- *Direction to fly a certain mission as part of a COMJTF deception operation.*
- *Direction to conduct strikes within a specific period of time.*

4.3.2. Restraints

- *No cross-border activities with country XX before date DD.*
- *Prohibition from attacking targets in a specific location (e.g., bordering nation) or during a specific timeframe, possibly for strategic considerations.*

JFAC *LIMITATIONS* CHECKLIST

A- Prerequisites

Factors analysis, CPOE, SSA, SPD, COMJFAC guidance and, when issued, OPG.

Any political material in relation with the operation (UNSCR, NAC initiating directive).

B- How to proceed

1. Appoint a AOPG syndicate to identify the limitations.
2. To initiate the process, sort the limitations (LC and LR) from the Factors analysis matrix
3. List the limitation delivered in the SPD and in the OPG.
4. Identify the limitations for the air component & for the COMJFAC freedom of action.
5. Cqtegorise them as “restraints” and “constraints”.
6. Fulfil the MAB template slide.

C- Outcomes

One slide with identified restraints and constraints for the JFAC.

Highlight the one developed by the AOPG from the one coming from other entities.

5. JFAC (PLANNING) ASSUMPTIONS

5.1. Definition

Assumption: Assumed fact, used in place of an information gap.

To be valid, it must be logical, realistic and necessary for the planning to continue.

Assumptions are treated as facts and therefore need to be analysed (factors analysis).

5.2. OPP and assumptions

➔ *Planning requires a comprehensive knowledge of actors and their environment.*

Factors Analysis may reveal gaps in knowledge and information. Planners may consider necessary to make an assumption in order to continue the component estimate process.

There may be some conditions we take for granted, but which actually are not to be considered as a fact. However, some of the "non-factual" conditions are necessary to continue planning. For example, if a nation or state inside the JOA is considered neutral in a conflict, this condition is not a fact, but an assumption.

Assumptions might be necessary to continue planning because the position of that nation as a neutral, friendly or an opponent can impact the operation.

➔ *Always keep in mind that assumptions are often the reason a plan can fail and they must be avoided unless absolutely necessary.*

- If an assumption proves false, the **plan could be invalid**.
- If an issue does not have this level of impact, it should **not** be an assumption.

An assumption will always be the basis for the follow-on decisions and **therefore it exposes the Commander to risk** because the assumptions can be wrong.

It is for this reason that the AOPG director and coordinators must ensure that assumptions are regularly reviewed. Any changes in assumptions must be evaluated in respect to their impact to planning conducted previously.

5.3. Considerations to take when developing planning assumptions

- ✓ Valid assumptions must be logical, realistic and essential to continued planning.
- ✓ Include JOPG assumptions in your assumptions. However, challenge assumptions that appear unrealistic.
- ✓ Treat JOPG assumptions as stated until COMJTF reclassification makes them facts.

  ➔ *Never make assumptions on adversary capabilities or assumed intentions.*
- ✓ Never "assume away" potential problems, such as weather or likely adversary capabilities and options, ISRD and A2 staffs should apprise air component leadership and planners of intelligence gaps (unknowns) about the adversary and the operational environment and seek to close those gaps through RFIs.
- ✓ A good RFI is specific & pertinent to addressing PIRs, and includes a last time information of value date.

- ✓ An assumption will apply throughout planning until verified as fact or discarded.
- ✓ Each assumption needs to have a risk evaluation.

➔ *Coordinate with the syndicate in charge the **risk analysis**.*

- ✓ Each assumption must be evaluated to determine if the requirement for the development of a branch or sequel exists. For that reason an assumption may highlight a potential CCIR. ➔ *Coordinate with the syndicate in charge of the **CCIRs**.*

In addition, to assist in their verification, assumptions will generate information, knowledge or intelligence requirements (RFI, CCIRs).

NOTES

ASSUMPTIONS CHECKLIST

A- Prerequisites

✓ Factors analysis, CPOE, SSA, SPD, COMJFAC guidance and, when issued, OPG.

B- How to proceed

1. Appoint a AOPG syndicate in charge of the assumptions development.
2. Have this syndicate connected with the two in charge of developing Risks and CCIRs.
3. List the Assumptions from the SPD and OPG.
4. Challenge the one that appear unrealistic.
5. Review the factors analysis by sorting assumptions identified (As) by planners and analyse them to determine their absolute necessity
6. Develop the Assumptions that adress the JFAC planning gaps.

Considerations to take when developing assumptions

- ✓ *Never make assumptions on alteration of challenging aspects of the situation*
- ✓ *Never make assumptions on enemy course of action or will to fight.*
- ✓ *Never make assumptions on adversary capabilities or assumed intentions*
- ✓ *Never make assumptions on a presumption of our own success*
- ✓ *Limit to the maximum extent the assumptions as they pose your plan at risk*

In developing assumptions, consider the five **A**s:

- ⇨ **A**wareness -- amount of warning or notification expected
- ⇨ **A**ssets —types & numbers available (e.g.; carrier battle groups, allied capabilities)
- ⇨ **A**ccess -- basing, overflight, ability to stage operations from
- ⇨ **A**dditional/other activity degree/type of involvement of bordering/third-party nations (e.g., what else is going on?)
- ⇨ **A**uthorities commander-specific (e.g., COMJTF-delegated, cross-CC relationships?)

7. Each assumption needs to have a risk evaluation. ⇨ Interaction with other syndicate
8. Evaluate each assumption to determine if the requirement for the development of a branch or sequel exists. ⇨ Assumptions may highlight a potential CCIR.
9. To assist in their verification, assumptions will generate information, knowledge or intelligence requirements (RFI, CCIR).

C- Outcomes

For the MAB, create a slide with developed assumptions.

Highlight the one developed by the AOPG from the one coming from other entities, by adding the name of the entity that has made the assumption.

6. JFAC SPECIFIED, IMPLIED AND ESSENTIAL TASKS

6.1. Definitions

Specified tasks: Tasks specifically assigned to the COMJFAC by the COMJTF.

Implied tasks: Tasks that Mission Analysis reveals COMJFAC could perform (or prepare to perform), but are not stated explicitly in an order or elsewhere.

Essential tasks: A short subset of specified and/or implied tasks the COMJFAC must accomplish to succeed at the mission and, in particular, ensure COMJTF mission success.

➔ *JFAC Essential tasks are the basis for the COMJFAC mission statement and Air objectives.*

➔ *There are no firm rules on how general or specific to make essential tasks. Ultimately, it is the commander's call on whether to individually, list the other components he/she is tasked to support (e.g., support LCC, MCC, and SOCC operations) or to say more generally "support other components' operations."*

6.2. OPP and Component tasks

Identifying the subset of tasks is ciritical for the AOPG to develop the mission statement (from the essential tasks), for further COA development (Specified and implied tasks) and assessment processes (Measure of performance on the list of tasks).

6.3. Examples of tasks

6.3.1. Example 1:

Specified task:

- ✓ *1. NTIF will enforce the UN mandated arms embargo*

Implied task

- ✓ *1.1 MCC ensures a naval control to support the embargo enforcement*
- ✓ *1.2 JFAC contribute to the RMP for the maritime embargo*
- ✓ *1.3 JFAC intercept unauthorised (No FPL) civilian flights inbound THY*

6.3.2. Example 2:

Specified task:

- ✓ *2. COMNTIF will deploy the NTIF to restore peace and security to IPA*

Implied tasks :

- ✓ *2.1 JFAC AD 24/7 in support of the deployment*
- ✓ *2.2 JFAC provides the RAP…*

6.3.3. Example 3:

Specified task:

- ✓ *3. NTIF will operate amphibious ops close to Diana by day+30*

Implied task

- ✓ *3.1 JFAC provides Air superiority, CAS and AI over Air Amphibious area to support LCC.*
- ✓

6.3.4. Essential tasks relevant to the JFAC (from examples 1,2 3):

- ✓ *1.3 JFAC intercept unauthorised (No FPL) civilian flights inbound THY*
- ✓ *2.1 JFAC AD 24/7 in support of the deployment*
- ✓ *2.2 JFAC provides the RAP*
- ✓ *3.1 JFAC provides Air superiority, CAS and AI*
- ✓ *1. NTIF will operate amphibious ops close to Diana by day+30*

Implied task not relevant to the JFAC as an essential task:

- ✓ *1.2 JFAC contribute to the RMP for the maritime embargo*

NOTES

SPECIFIED, IMPLIED & ESSENTIAL TASKS CHECK-LIST

A- Prerequisites

✓ Factors analysis, SPD, COMJTF mission, OPG (when issued).

B- How to proceed

1 Appoint a AOPG syndicate to work on this process (Include Assessment team).

2 To initiate the process, sort the tasks ("T") from the Factors analysis matrix

3 Identify JFAC **specified tasks** in the OPG in paragraphs "Tasks to Subordinates" and/or "Coordinating Instructions".

⇨ If the OPG is not issued (you can have a draft), consider the tasks from the factors analysis to identify the taks that should be given to the JFAC by the COMJTF.

Ex: Degrade enemy's military production and distribution infrastructure
Ex: Destroy adversary's chemical warfare capabilitiesIf the OPG is not delivered

4 Derive **implied tasks** from End State conditions, COMJTF mission, intent, concept, and specified tasks, to include specified tasks to other components.

As a technique, question yourself with the following:

1- In this situation, what other major tasks would COMJFAC normally perform?

Ex: COMJTF requests Freedom of manoeuvre over west over Thy by D+30

⇨ *JFAC implied task : Air and/or space superiority (if not specified by the COMJTF).*

2- What in the COMJTF mission, intent, or concept implies a major (but unstated) task for the COMJFAC?

Ex: COMJTF mission include "deterrence"

⇨ *JFAC implied task : contribute to deterrence.*

3- What task to another component is likely to require significant support from the COMJFAC?

Ex: an amphibious ops or a Non-combatant Evacuation Ops is scheduled, the

⇨ *JFAC implied task : support preparation for and execution of that operation.*

5 Develop JFAC **essential tasks** by using the JFAC **specified tasks** and the more relevant **implied tasks**

Ex: Deploy the JFAC; Beddown the Air component; Sustain the Air component; Protect the Air component; Liaise with local Civ. Aviation entities and Redeploy the Air component

C- Outcomes

A list of taks, tagged as speicifed, implied and essential, with a highlight on the essential one as they are essential to develop the mission statement

There is no specific slide to develop for the MAB, this list of tasks is useful for further developments (mission statement, COA development, MOPs (assessment team)

7. COMJFAC MISSION STATEMENT

7.1. Definition

Mission statement: a clear, concise statement detailing **who** will conduct the operation, **what** is to be achieved, **when** it will take place, **where** it will occur, and **why** it is being conducted. It includes, by its nature, the authority and freedom of action required to achieve the assigned objectives while clearly articulating the role of the subordinate command in contributing to the higher command's mission accomplishment as envisioned in the higher commander's intent. For every command there is only one mission.

7.2. OPP and JFAC Mission statement

7.2.1. Provisional JFAC mission

JFAC mission **may be** provided by COMJTF through the OPG. In that case, JFAC should analys and review it if necessary. After approval of COMJFAC, a revised JFAC mission should be addressed to the COMJTF for their endorsement.

7.2.2. Developing mission statement

The development of it is critical as it is the basis for planning and is included in planning guidance, staff estimates, the CONOPS, and the completed plan. The mission statement will cover the entire operation (all the phases). It provides a clear statement of the action to be taken, their phasing (PURPOSE), their location (SPACE) and the reason for doing so (PURPOSE). It can be revised if initial circumstances change.

7.3. Examples of COMJFAC mission statement

When directed, COMJFAC will deploy forces within the JOA and will support space, and cyber operations in the JOA to deter Redland aggression. If deterrence fails and on order, COMJFAC gains and maintains air and space superiority and conducts supporting operations to gain and maintain assured access to the space and cyber domains, supports the LCC to halt and then defeat Redland ground forces; incapacitates Redland political leadership; supports MCC and SOCC ops, and on order, destroys WMD delivery means to compel Redland surrender. COMJFAC retains combat capabilities and provides ISR to defeat remaining resistance and enable the establishment of a non belligerent Redland, free of WMD, and peace and stability in the region.

Example #1

When directed, COMJFAC will deploy forces within the JOA and will support space, and cyber operations in the JOA to deter Redland aggression. If deterrence fails and on order COMJFAC will gain and maintain air and space superiority and conduct operations to support assured access to space and cyber-domains to enable joint operations throughout the JOA; integrate joint air operations with LCC and MCC ops to defeat Redland forces on land and sea; incapacitate Redland political leadership to compel regime change; and, on order, destroy WMD capabilities to reduce Redland to a regional defensive capability free of WMD. COMJFAC conducts transition ops with ISR, CAS, and airlift to minimise friendly casualties, eliminate resistance; and enable the resumption of economic trade with outlying nations.

Example #2

COMJFAC conducts air and information operations and supports space, and cyberspace operations in the JOA to deter Redland aggression and malign influence. When directed, COMJFAC gains and maintains air superiority and conducts supporting operations to gain and maintain assured access to the space and cyber domains, supports the JFLCC to halt and then defeat Redland ground forces, actively influences adversary understanding of joint force capabilities, disposition, readiness, and intent, incapacitates Redland political leadership, counters disinformation and propaganda pertaining to joint force activities, supports JFMCC and JFSOCC ops, and on order, destroys WMD delivery means to compel Redland surrender. COMJFAC retains combat capabilities and provides ISR to defeat remaining resistance and enable the establishment of a non-belligerent Redland, free of WMD, and peace and stability in the region.

Example #3

When directed, COMJFAC will: gain and maintain air superiority and conduct operations to support assured access to space and cyberspace domains to enable joint operations throughout the JOA; integrate joint air operations with JFLCC and JFMCC ops to defeat Redland forces on land and sea; incapacitate Redland political leadership to compel regime change; message Redland civilian population concerning malign activities sponsored by their political leaders, and, on order, destroy WMD capabilities to reduce Redland to a regional defensive capability free of WMD. COMJFAC conducts transition ops with ISR, CAS, and airlift to minimize friendly casualties, eliminate resistance, secure public legitimacy for the joint force presence, and enable the resumption of economic trade with outlying nations.

Example #4

When directed, COMJFAC conducts air/space and contributes to information operations in the JOA to deter Redland aggression. If deterrence fails, COMJFAC gains/maintains/A/S/I superiority, supports other coalition components operations and isolates and incapacitates Redland's leadership in order to defeat Redland aggression, set conditions for stability operations, set conditions for stability operations and achieve strategic end state conditions. On order, COMJFAC detsroys Redland WMD capability.

WHO, WHAT, WHEN, WHERE, WHY

Example #5

MISSION STATEMENT CHECK-LIST

A- Prerequisites

- ✓ Political end state; Joint mission statement and COMJTF's intent.
- ✓ COMJFAC mission (when provided by Joint level)
- ✓ JFAC Essential tasks

B- How to proceed

1. Appoint a AOPG syndicate in charge of the Mission statement development.
2. Should a provisional mission statement given, start with the review of it.
3. Consider these tips before developing (or revising) the mission statement:

- ⇨ Cover all key phases of the operation (deterrence, Combat, Initiative, Dominance, Stabilisation, enabling) in three or four sentences
- ⇨ Use present tense, "the COMJFAC conducts...and, on order, gains and maintains..."
- ⇨ Stating "On order" means "to be executed at an unspecified time in the future"
  - ↳ Commander's actions: Allocate resources, task and position forces for execution.;
- ⇨ Stating "Be prepared to" means m"ight be executed" or "planned after any 'on order' missions"
  - ↳ Ccommander's actions: resources are not commited and forces are not immediately repositioned for execution

4. Develop (or revise) the mission statements of the COMJFAC addressing:

- ⇨ **Who** -- COMJFAC
- ⇨ **What** -- the essential tasks
- ⇨ **When** -- often expressed by "when directed", "on order"; or "be prepared to" (TIME)
- ⇨ **Where** -- in the JOA or other designated geographic area (SPACE)
- ⇨ **Why** the broader purpose for the essential tasks (PURPOSE)

Ex : "task to be done" to "meet COMJTF objectives'" "deter aggression"; "compel acceptance of coalition terms"; "contribute to regional peace and economic stability."

the AOPG must continually consider the assigned mission and objectives during the mission analysis and develop, if warranted, recommendations for change. Review of the mission is based on JFAC capabilities, limitations, and COMJFAC 's intent.

C- Outcomes

Create a slide (MAB) with the COMJFAC mission statement. If a revision of the mission issued by the JOPg is proposed, underline the change to the COMJFAC during the MAB.

8. CRITICAL OPERATIONAL REQUIREMENTS (COR)

8.1. COR definitions

CCIRs (Commander's Critical Information Requirements): Critical elements (Information and intelligence) selected by the Commanders that they deem critical to maintain situational awareness, plan future activities and to assist them with timely and informed decision making. CCIRs are made of PIR and and FFIR.

They are considered as warning events for the COMJFAC during *the execution phase.*

PIR (Priority Intelligence Requirements): PIRs are key questions to be answered about an adversary's capabilities or intentions, necessary for planning and decision making. They concern both the enemy /neutral actors (including the time available to the enemy) and the environment (terrain, weather and some civil considerations). PIRs are divided into categories called Essential Elements of Information **(EEIs)** which friendly forces try to collect via ISR means.

FFIR (Friendly Forces Information Requirements): FFIRs are what commanders needs to know about their own forces' ability to accomplish their mission. FFIRs consist of requirements of information on the mission, troops, support, and time available for friendly forces. Some information, Essential Elements of Friendly Information (EEFIs), must be protected from enemy detection through OPSEC.

Critical operational support and resources requirements: military requirements, sustainment, and the Joint support required to accomplish the mission. These elements must be requested of COMJTF.

Preconditions for success: Essential conditions that are beyond the influence of the COMJFAC and necessary to allow operational success of the Air component.

Rules of Engagement (ROEs): Rules that authorise the use of force during specific situations requiring rapid reaction. They must specify a release authority at the appropriate level to ease the decision-making according to COMJTF guidance A standard list of them exists within NATO.

Requirements for interaction with relevant Intal and national actors: Any interaction required regarding the use, coordination, management of the Airpsace and other activities that are required for the C2 of Air operations.

StratCom and information Strategy requirements: Specific audiences, InfoOps and PsyOps key leaders, as well as the basic themes that may be required to achieve Air operational objectives.

Crisis Response Measures (CRM): CRMs are detailed actions which are available to be immediately implemented at the appropriate levels. CRMs are listed through trigrams addressing different domains of interest. CRMs are a part of the NATO's Crisis Response System (NCRS), which purpose is to be prepared for crisis and conflict prevention for crisis management across the range of possible NATO interventions.

8.2. JFAC estimate and CORs

This stage requires different syndicates. The CCIRss are developed at the same time as risk analysis and assumptions development. Since assumptions may alter the plan, it behoves COMJFAC to act in a timely manner.

➔ *The AOPG coordinators, responsible for the coherence of results, have to coordinate between syndicates because potential connections between topics*

Throughout the conduct of the mission analysis, the AOPG should be continually attuned to the need to identify specific operational requirements that are critical for operational success of Joint air power. Some of those requirements are critical to the COMJFAC and others need to be raised up to the Joint level for consideration or decision.

8.2.1. JFAC Estimate and COMJFAC CCIRs

Expected and more critically, unexpected events, may require the COMJFAC to react immediately to cope with a new critical situation. CCIRs are essential to the COMJFAC's decision-making and development of the plan, particularly as it is related to a plan's assumptions. CCIRs are also related to decisions for plan execution, including Decision Points for branches or sequels, or the transition between phases.

The AOPG proposes a list CCIRs to the COMJFAC that will express their preferences on them. CCIRs are to be split into sub-categories: PIR and FFIR to enable intelligence collection processes in support of them. Intel personnel should be part of the "CCIR syndicate" to integrate intelligence collection from the onset.

➔ *When planning, if the AOPG requires higher-level direction in regards to the enemy, this element could be considered as a PIR.*

8.2.2. JFAC Estimate and Preconditions for success

The AOPG must identify the Preconditions for success that may also address changes needed in non-military domains that facilitates the achievement of the operational commander's objectives. The JOPG should provide operational guidance on strategic conditions that must be established or fostered by the political level in order to achieve operational success. Those preconditions should be reviewed and modified if their outcome lacks elements from an air perspective. The AOPG highlight preconditions exclusive to the conduct of air operations and should bring them to the attention of COMJTF.

Ex: diplomatic clearances, HNS and legal agreements (Such as status of forces, HNS, and/or any additional agreement (third nations arrangement) aimed at specific mission support.

8.2.3. JFAC Estimate and ROEs

Planners must assess ROEs provided by the higher level in order to appreciate their robustness and the delegate authority required. This assessment requires both Legal, Offenisve and defensive experts in order that they match those of any potential situation during which the JFAC assets may use force.

8.2.4. JFAC Estimate and other Requirements

In regards to potential COMJFAC responsibilities (ACA and ADC), the AOPG should consider any actor which could impact airspace management or the air defence design.

National organisations with a civilian aviation focus should be contacted to organise the use of airspace above its territory within the JOA. NGOs or IOs in the JOA should be addressed, as they may also need to use the airspace.

➔ *This is the responsibility of the AOPG to identify those actors/services and to establish liaison with at an early stage in the planning process.*

For other requirements, the AOPG shold consider any apsects of CRMs, the StratCom and information Strategy as potential supporting processes and request for them to higher level, addressing the appropriate topic.

NOTES

COR CHECKLIST

A- Prerequisites

✓ Factors analysis, SPD, COMJFAC guidance and, when issued, the OPG. If an OLRT is deployed on the theatre: initial OLRT report.

B- How to proceed

Determine the subgroups to distribute the work among the planners in the AOPG

B.1 CCIRs development

1. The development of CCIRs must be done in close collaboration with the groups on assumptions and risk assessment
2. Sort CCIRs from the conclusion of the factors analysis
3. Take a look at the Joint mission. Since the air Component contributes to the overall end-state, everything that concerns the achievement of the overall mission, will likely concern as well the air component mission
4. Identify elements that COMJFAC should consider bringing to their attention as soon as they occur (during the implementation phase) in order to give them the opportunity to adapt quickly to the new situation and make appropriate decisions in a timely manner.

   ➔ *What are the elements for which you must wake up immediately the COMJFAC?*
5. Coordinate with "Assumption" and "Risk analysis" syndicates as you may highlight new CCIRs from their analysis

B.2 Pre-conditions for Success development

1. Get the preconditions for success from the JOPG;
2. Review them and modify them if needed to address the JFAC
3. Identify preconditions exclusive for the conduct of air operations, including:
   - transit authorities' establishment,
   - Host Nation Support for air operations
   - Legal agreements, such as on the status of forces, HNS, and/or any additional agreement -including with third nations- aimed at specific mission support).
4. Bring to the COMJTF the modification on the joint preconditions and the JFAC exclusive preconditions developed by AOPG

B.3 ROEs development

1. Compose this syndicate with experts on AD, SBAD, offensive air ops and a LEGAD;
2. Obtain reported ROEs for review;
3. Identify the need for other ROEs;
4. Review the delegation authority for each of them and propose required amendments;
5. Insert in the MAB the ROEREQ to be forwarded to the COMJTF for approval.

B.4 Critical Operational Support and Resources Requirements development

1. The syndicate in charge of those focus area should include logistics, CIS, medical, finance and human resources experts;
2. Sort the conclusions from the factor analysis matrix to highlight those marked "SPT".
3. Identify the service support requirement concerning:
   - Logistic Support; Movement; Host Nation Support; Supply and Maintenance; Contractors support; Military Engineering; Medical Support; Finance and Manpower.

B.5 Requirements for interaction with international or national actors

1. Identify the actors relationships to establish for the purpose of air operations;
2. List the complementary non-military activity in support of Military actions;
   Ex: Servicing a catering in civil airports for tactical air transport aircraft.
3. List the complementary military actions in support of non-military activity
   Ex: Protection of IDP camps, of LLOCs for HA
4. Identify the required mutual support and de-confliction of critical activities
   Ex.: NGO flight deconfliction with NATO air assets
5. List the interaction requirements for these actors to be brought to COMJTF

B.6 Requirements & guidance for CIMIC (Civil and Military Cooperation)

1. Identify the civil entities to address in accordance with COMJFAC responsibilities regarding airspace management and coordination.
2. Identify the civil entities (IOs, NGOs) requiring the use of the airspace and with which JFAC is to liaise and cooperate.

B.7 STRATCOM/Information requirements

1. Identify the key audience to target/influence for Air operations support.
2. Escalate this information/requirement to the joint level and insert it into the MAB.

B.8 CRMs review/ additional CRM requirements.

1. Review the declared CRMs in order to assess their validity;
2. Identify the supplementary required CRMs in support of Joint air power;
3. Create the MAB slide with additional CRMs for COMJTF approval.

B.9 Other Critical Operational Requirements.

1. Identify the **targeting** requirements for the JFAC;
2. Identify **Personal Recovery** (PR) requirements for the JFAC;
   ⇨ *NB: this should include discuss with JOPG about JPRC location and responsibilities.*
3. Identify Time Sentitive Targeting (TST) requirements and TST for JFAC operations
   ⇨ *NB: Think about discussing with JOPG on Joint TST cell location and responsibilities.*
4. List any other requirements not addressed before.

9. (OPERATIONAL) RISKS ANALYSIS

9.1. Definitions

Danger: A danger is something that poses a threat to personnel or infrastructure.

Example: a SCUD system;

Risk: A risk is a situation involving exposure to danger.

During risk analysis, AOPG should consider risks to the mission as welle as risk to the force

➔ *Risk should not be confused with danger.*

Example: a SCUD system is a danger; therefore, a threat for anybody who is within its range and puts the force at risk, potentially targeted when deployed within the SCUD range. In a situation as such, the "SCUD launch against own forces" is a risk.

➔ *"Risk to forces" is used when "the enemy uses a system that poses a danger for the force or that prevents the force from acting efficiently".*

Probability: This is the chance that something will go right or wrong. It is rated as low, moderate or high.

Severity: Severity of a risk represents a consequence level or a potential level of impact to an air operation. Severity is identified as:

- **Extremely high (EH) -** will result in failing to accomplish the mission.
- **High (H)-** could result in failing to achieve one objective or decisive condition.
- **Moderate (M)-** could result in failing to meet a criterion for success, operational effect or exceed a time, space, or force actor limit.
- **Low (L)-** minimal impact to mission accomplishment.

Mitigation measures: additional tasks, capability requirements and limitations, which reduce the probability and/or severity of a risk. These measures can also be addressed directly at the source of the danger that poses a risk.

Conclusions – risk acceptability: Conclusions should reflect acceptability of residual risk attributed to COMJFAC after mitigation measures. The following considerations must be taken to assess the acceptability of residual risk:

- **Unacceptable -** risk mitigation cannot reduce risk to an acceptable level**.**
- **Conditionally acceptable -** risk can be reduced to an acceptable level by taking action (modifying force disposition/posture/composition, adjusting current operations, preparing for branch or sequel plan).
- **Acceptable -** no risk mitigation action required**.**

9.2. OPP and risks

During mission analysis, the AOPG may identify risks:

- ✓ that could impede the achievement of air objectives;
- ✓ to JFAC forces that could result from the operational environment or the capabilities and actions of key JOA actors.

9.3. Risks assessment Process

Risk is assessed by quantifying the likelihood by which it could occur (probability) and the gravity of its impact (severity). Risks are captured during the factors analysis process.

➔ *It should be noted that the risk assessment process may highlight other risks to be evaluated.*

Determining the probability of a risk should enable development of appropriate mitigation measures.

➔ *When a probability is high, planners should mitigate the risk by acting directly at the source of the risk (eliminating the danger its self (targeting), the exposure to it (Defence) or the will of an actor to use it (Info ops)).*

The resulting level of impact on the operation is considered to assess the severity.

Evaluating severity should also help the AOPG develop mitigation measures which limits the scale and severity of consequences.

➔ *The AOPG should not assess "low" risks in terms of probability and impact.*

Once risks have been identified, the AOPG will consider ways to mitigate them, addressing probability, severity or both. This action may highlight additional tasks, capability requirements and/or limitations resulting from considering of the following questions:

- How can we reduce exposure?
- How can we reduce the probability of occurrence?
- How can we limit the scale and severity of the consequences?

With mitigation measures implemented, the group is to evaluate the acceptability of the risk using the considerations for risk acceptability. COMJFAC should be involved as residual risk should be compared with acceptable risk determined by him/her.

The conclusions of the risk assessment process are critical, as they constitute key outcome of this process. Additional tasks or capability requirements are often the results of this assessment.

9.4. Risk assessment outcomes

Risk assessment highlights critical issues and the mitigations measures necessary to address them.

➔ *See the Check-list for risk assessment to have some examples.*

RISK ASSESSMENT CHECKLIST

A- Prerequisites

✓ Factors analysis conclusions, COMJFAC risk level acceptability (NB: this is not the risk to the force but to the JFAC mission accomplishment).

B- How to proceed

1. Sort the "RIKS" conclusions from the factors analysis matrix.
2. Augment this list with the different dangers that pose the enemy or the environment on the JFAC force or COMJFAC mission accomplishment.
3. Write (possibly rephrase) the identified risks.
   - ⇨ *Do not assess the success of an attack nor a failure of a counter attack.*
   - ⇨ *When getting a danger, the risk is that the danger is used towards you or a friendly actor*
4. Gather risks with similar outcomes.
5. Determine the probability of occurrence or likelihood: High(H), Moderate(M), Low(L).
   NB: Use colours to ease the reading (H➔ Red, M➔ Yellow, L➔ Green)
   NB: This determination should not be subjective: Be prepared to be challenged on it and have arguments to justify your choice to the COMJFAC.
6. Determine the severity of the consequences of this risk if it were to occur. Rate it:
   - ⇨ **(EH) Extremely high** – may result in Mission failure.
   - ⇨ **(H) High**- could result in failure to achieve one or more objectives, or DCs.
   - ⇨ **(M) Moderate** - could result in failure to meet criteria for success or to create operational effect, or exceed time, space, forces / actors limits.*
   - ⇨ **(L) Low** - minimal impact on mission accomplishment.
   - ⇨ *as for the probability, have arguments to be able to explain why you assessed the severity level as such to convince COMJFAC.*
   - ⇨ *Use colours to ease the reading (EH➔ Black, H➔ Red, M➔ Yellow, L➔ Green)*
7. Eliminate risks with both severity and probability assessed as "Low".
8. Determine the consequences of the risk on the mission.
9. Determine mitigation measures for risk out of both low probability and severity.
10. Evaluate risk level acceptability with mitigations measures.

Risk Level = Severity x Probability

   - ⇨ *If the risk level is unacceptable (risk mitigation cannot reduce risk to an acceptable level (determined by COMJFAC), the commander should be advised immediately.*

C- Outcome – Example

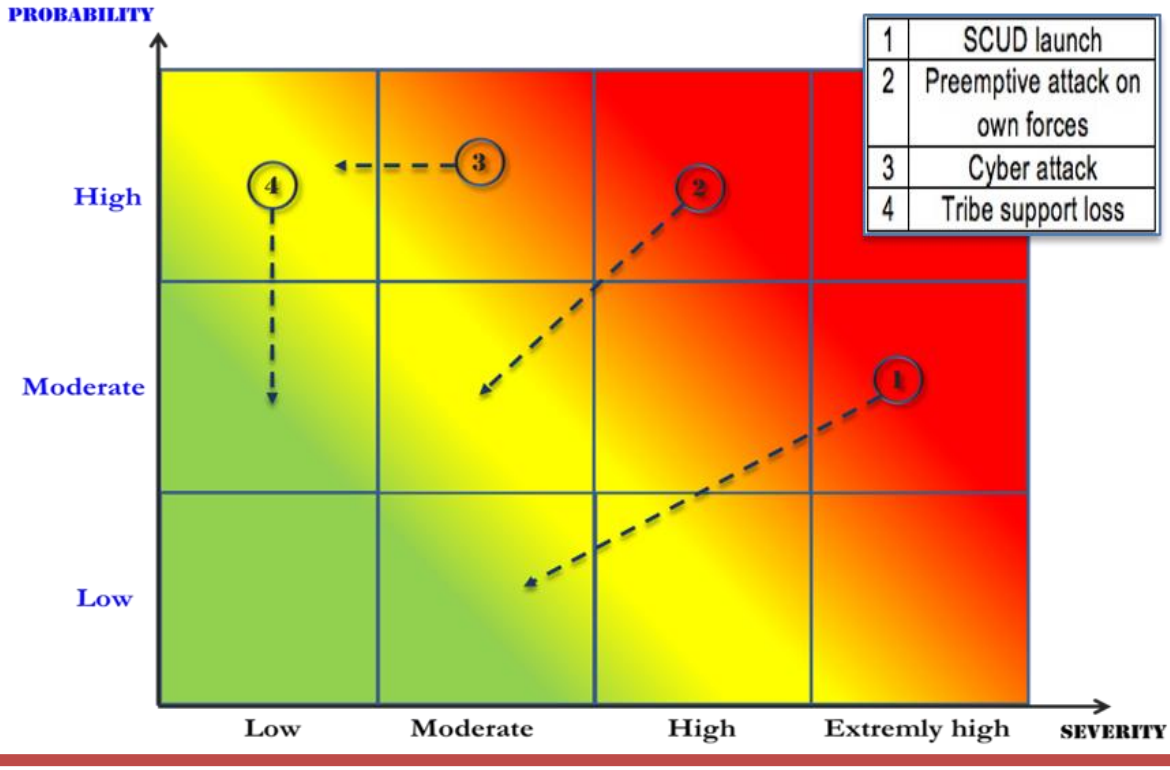
Provide the COMJFAC with a relevant risk evaluation matrix with mitigations measures and acceptability assessment.

Risk	Prob	Severity	Consequences	Mitigation Measures	Conclusion
1-SCUD launch against X	Med	High	•Loss of Support from Actor X •Loss of NATO credibility	•Provide TBMD to protect Actor X • Insert SCUD syst. ➔ TST matrix	Conditionally acceptable

The matrix above is a way to deal with risk, mitigations and acceptability.

RISK	RISK EVAL	CONSEQUENCES	MITIGATION MEASURES	RESIDUAL RISK EVAL
Full-scale conflict between CONF and ALL (esp. after AMAZONIA deployment)	P S	CONF Inferiority (balance of power) TRANSEINIA Crisis is lost	Act before AMAZONIA arrival (P) Impede ALL deployment (S) Effective A2AD (S)	P S
Airspace violation by CONF	P S	International community supports ALL actions Strengthen ALL cohesion Impact on SEQ public opinions AZU & FLA entries in the conflict	Buffer zone (P) SPINS (P) STRATCOM (S)	P S

In the above example, risk evaluation is a multiplier of probability and severity.(Risk Level = Severity x Probability). Then, with the matrix "risk level acceptability" validated by the COM JFAC, the risk level is determined.



10. DEVELOP THE COMJFAC INTENT

10.1. OPP and COMJFAC intent

The COMJFAC's intent statement should articulate his vision of the end state and purpose from an air perspective.

- ⇨ *Commander's intent may be articulated for a phase, individual ATO, or entire conflict.*
- Initially in Mission Analysis, COMJFAC intent statement should address the overall conflict and represent the COMJFAC's component contribution to the JFC's military end state.
- As COA development continues and gains greater detail, it may be appropriate to develop phase-level intent statements.
- ⇨ *The intent statement should always include end state and purpose, and may include risk, method, or key tasks to achieve the end state.*
- **Military end state** is the set of conditions that defines achievement of objectives. It can represent a set of circumstances and/or a point in time, and can be developed for a campaign, a phase, an operation, an ATO period, or any specified time period that defines the achievement of the commander's objectives.
- ⇨ *The COMJFAC should personally articulate his intent statement, but may rely on the JFAC HQ staff for a first draft.*

10.2. Examples

10.2.1. Example 1

My intention for coalition air operations is to: detect, and deter defeat hostile threats to friendly forces, property; defeat threats to our use of air, space and cyber domain throughout the JOA; control the airspace over Titatium until that control is transferred to Titani airspace authorities; train Titani Security Forces capable of independently providing security and maintaining public order; and support cyber and space dominance and enable strategic communication. Our purpose is to support combined and joint security operations that enable the development of a peaceful and democratic Titanuim state. I will accept moderate risk to Coalition forces in order to defeat imminent threats to friendly force and population

10.2.2. Example 2

Purpose: Destroy terrorist cells & infrastructure and deter any attack against the Blueland Government and its territory. If required; defeat conventional Redland attack In the disputed zone or other Blueland areas; eliminate near- and mid-term Redland offensive military threat to Blueland.

Method: I will support the JFC with trained and positioned air forces. I will protect and sustain these forces and protect the APODs & SPODs critical to deployment and sustainment.After major combat operations, I will maintain a strong defensive posture and assist in transition operations with ISR and airlift. I will redeploy forces as required. I will

protect Civil-Military operations and humanitarian assistance activities during peace enforcement.

End state contribution from the air component

- ⇨ Blueland Government secure, territorial/integrity restored
- ⇨ Invading Redland groundforces destroyed , captured or withdrawn
- ⇨ Redland WMD delivery capability destroyed
- ⇨ Redland incapable-of projecting offensive combat power beyond its borders
- ⇨ coalition forces transition to international control and redeployed

10.2.3. **Example 3**

Purpose

Maintain/enable restoration of the national sovereignty of Blueland

Key tasks

- ⇨ Maintain a persistent and aggressive deterrent posture toward Redland
- ⇨ Delay Redland's corps movements toward the mineral fields
- ⇨ Prevent force closure or preclude significant penetration of ground defences
- ⇨ Set conditions for and support JFLCC counteroffensive
- ⇨ Protect friendly forces from air and missile attacks
- ⇨ Support achievement of maritime superiority

End state contribution from the air component

- ⇨ Redland forces expelled from Blueland
- ⇨ Political borders re-established
- ⇨ Redland military capability degraded to defensive

CRITICAL TIMINGS CHECKLIST

A- Prerequisites.

✓ Critical timing from JOPG; phasing for the operation, JLSG information, Planning timings (COA DB, CONOPS back brief, SUPPLAN delivery for approval

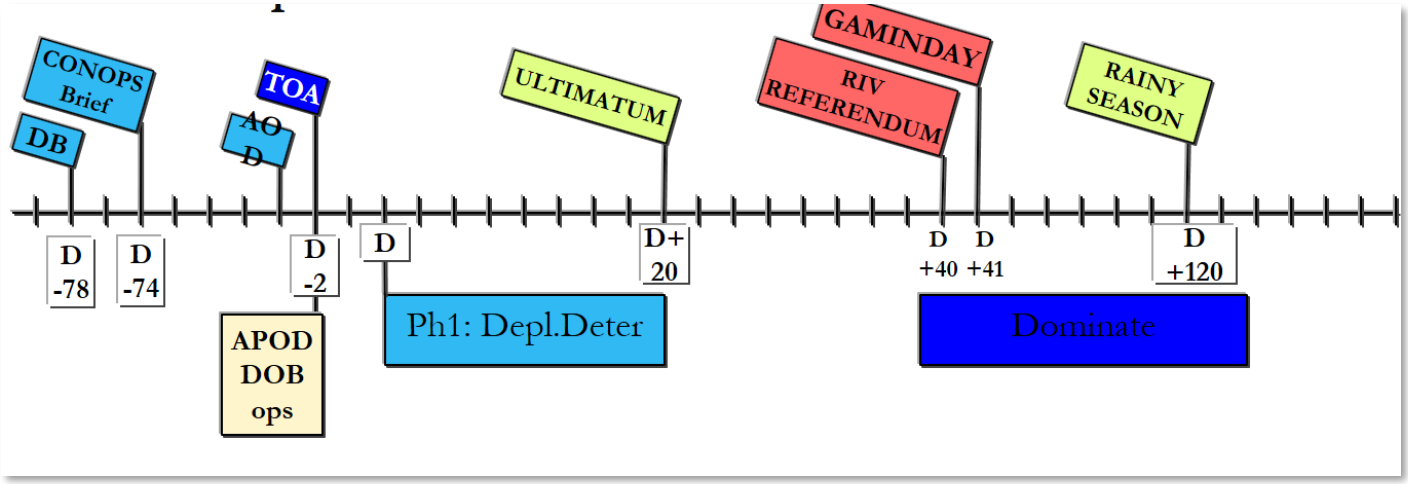
B- How to proceed

1. Get Planning milestones, including:
   - ⇨ specifically when the Commander will be available for a Mission Analysis Briefing (MAB) and COA Decision Briefing (COA DB)
   - ⇨ CONOPS back brief to COMJTF
   - ⇨ AIR SUPPLAN/OPLAN AIR delivery for approval
2. Get the Operation phasing from Joint level (through ACCE)
3. Include any critical timing regarding the operations environment or international issues (ultimatum, referendum…)
4. Insert any logistics timings with an impact on joint air operations
5. Select the timings that are critical for the planning activities and for Joint air operations.
6. Create a slide gathering all those critical timings

C- Outcome

A slide to be inserted in the MAB with all the relevant timings issue/deadline (planning activities and operations) to be presented to the COMJFAC.

Example of timeline



FORCE/CAPABILITY ESTIMATE CHECKLIST

A- Prerequisites.

✓ List of Air assets (Force generation process?), effects, operations phases.

B- How to proceed

1. Identify the tasks or effects for the different phases (on a timeline)
2. For each effect (or task), determine the required capability (or number of assets)

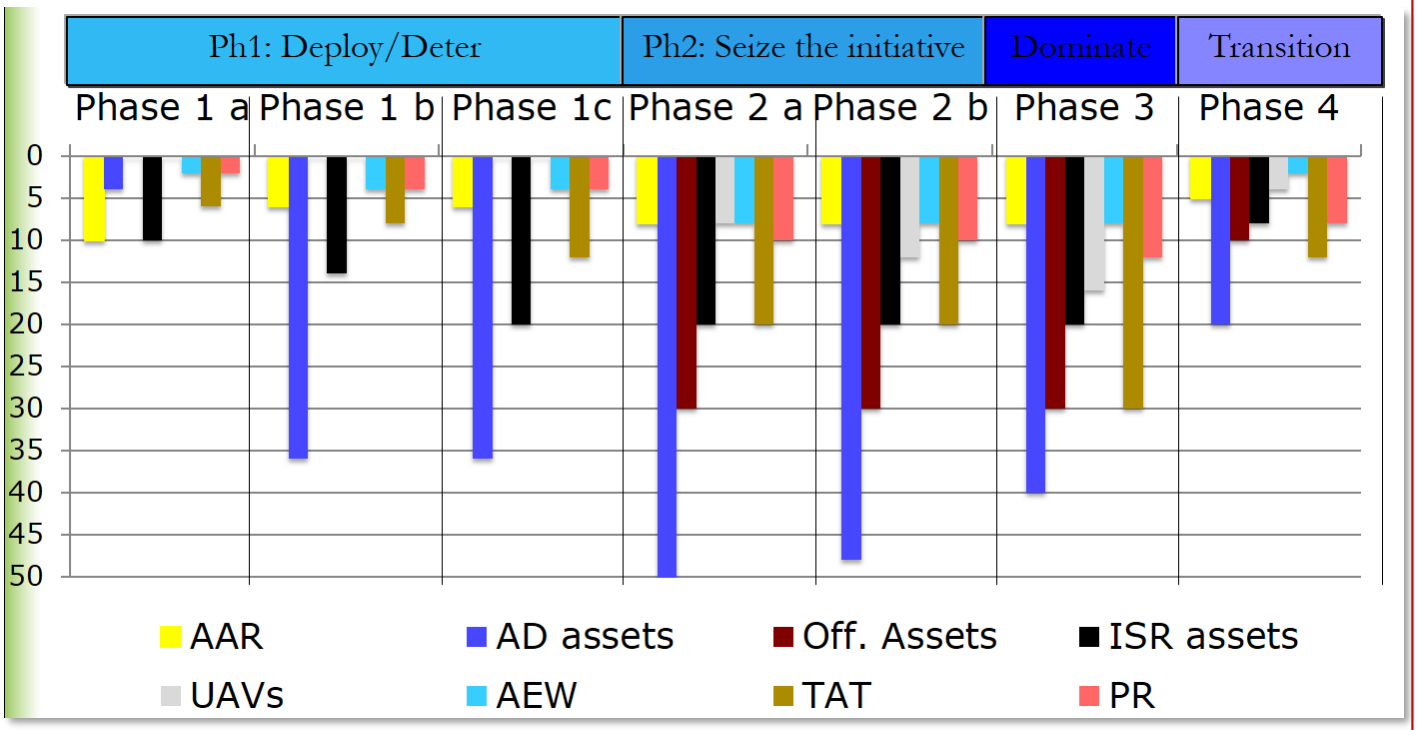
➔ *This determination requires SME expertise*

3. Develop a matrix with the timed phases and required capability/number of assets
4. Compare it with the forces for planning (if given)
5. Highlight the gaps and the request for forces to meet the operational requirements

C- Outcome

A Slide presenting the force estimate and highlighting the gaps in the list of assets scheduled for the operation.

Example of capabilities estimate outcome



⇨ *This matrix is to be compared with the initial force.*

C2 REQUIREMENTS CHECKLIST

A- Prerequisites.

✓ JTF and other CCs C2 arrangements, COMJFAC intent on the JFAC HQ location and on its personal location.

B- How to proceed

1. If no decision has been taken, propose to COMJFAC different options for the JFAC HQ location with pros and cons; Obtain COMJFAC will about the HQ location.
2. Use a standardised JFAC HQ organisation;
3. Adapt it to the current C2 trends for this operation:
   - ⇨ other C2 organisations;
   - ⇨ required coordination with civilian entities;
   - ⇨ dispersion of forces in the TOO.
4. Identify the need for liaison structures and propose liaison elements to be sent to other structures (MCC, LCC, SOCC, JLSG, JTF HQ, Civilian aviation authorities);
5. Identify the required CIS support for this organisation (think about NATO standards and possibilities);
6. Define the CIS requirements and the CIS team and network to develop
7. Identify the Air C2 tools and Joint tools (considering the COMJFAC responsibilities (JPRCC, JTST cell?)

C- Outcome

A proposed location and organisation for JFAC HQ with required CIS support and requirements (to NCIA).

NOTES

11. DECISIVE CONDITIONS TO ESTABLISH (DC)

11.1. Definitions

Decisive condition: "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 Ops objective.".

⇨ *DC must be achievable and sustained during all the operation.*

Conditions to establish: Required physical or behavioural changes in the actors' systems/system elements.

Criteria for success provide tests for determining when the objective are achieved. They can be useful to the operations assessment process and decisions related to transition and termination of operations. They may be used to describe conditions that must exist for the NATO end state or an objective to be achieved including any conditions that cannot exist. *They may however be a useful mechanism at this point to assist the AOPG to determine the conditions to be established and to evaluate the wording of the provisional Air objectives.*

11.2. Decisives Conditions and OPP

The analysis of the mission and the air objectives helps the COMJFAC and the AOPG to :

- Develop a clear understanding of the operational problem;
- Identify which system need to be influenced or to change;
- Draw out the implied conditions that must be established and sustained.

With the analysis of CoGs, the AOPG is provided with additional insight into what changes in the behaviour and capabilities of specific actors/systems may be required.

When these changes can be maintained they are defined as conditions to establish. Determining these conditions will help in designing the JFAC operational framework. This framework, the *initial operational design,* is composed of those decisive conditions.

⇨ *The specific process of determining conditions is part of "planning art".*

As a precursor to determining tactical conditions to be established, the AOPG reviews the Operational level **conditions to be established** as described by the NATO end state, Operational level objectives (and any promulgated criteria for success). This work is performed with a focus on the COMJFAC's intent.

The conditions to be established by the JFAC will contribute to:

- Establishment of the Operational level conditions,
- Achievement of Air objectives and Operational objectives
- Ultimate achievement of the desired NATO end state.

11.2.1. Analyse provisional COM JFAC Mission

The purpose of this analysis is to consolidate what is known about the assigned mission, and then to determine the actor systems to be influenced.

COMJTF will have provided a provisional COMJFAC mission, including objectives, in the OPG, which ultimately provides the focus for the employment of the joint Air force to

influence operational COGs and achieve changes required in the operational behaviour or capabilities of specific actor systems.

The AOPG analyses the provisional mission and its objectives to draw out the implied conditions to be established and/or sustained.

The AOPG can develop criteria for success for each objective, especially if their wording is vague, to assist determining the conditions to be established.

the AOPG must continually consider the assigned mission and objectives during the mission analysis and develop, if warranted, recommendations for change. Review of the mission is based on JFAC capabilities, limitations, and COMJFAC 's intent.

➔ *At this point, the COM JFAC mission and its objectives are still provisional.*

11.2.2. **Determine the actor systems to be influenced**

Considering the JFAC mission and objectives, the AOPG reviews their appreciation of the main actors (enemies, friends and neutrals), including their goals, relationships, strengths and weaknesses to better appreciate what are the conditions to establish.

⇨ *Analysing the CoG CV will help in determining which system(s) to influence.*

These additional conditions to be established support those required to achieve the objectives and their appreciation is critical to the determination of effects required to establish overall conditions.

It should also assist identification of requirements for contributions by non-military means and for possible military contribution to required non-military effects.

During this process, planners may highlight some point where a key decision of the commander should be required. They will be identified as Decision Points (DP) and key elements of the operational design. DPs should be connected with CCIRs.

Decisive Conditions are determined from critical factor analysis, which will determine whether a direct or indirect approach is required, if cumulative effects are required, and whether a specific Decisive Condition is linked to a Critical Vulnerability (CV).

⇨ *DCs are not COGs, but they are the keys to attacking or protecting them. Because of this, DCs identification is a critical part of Ops Design development.*

Considering both friendly and enemy CoG CV in regard of the mission statement, planners should be able to identify conditions to be effective to protect/degrade CVs.

JFAC Mission analysis + friendly/ennemy actor CoG CC and CV review
➔ *conditions to establish on friendly/enemy systems (DC)*

Examples:

- ✓ *Part of mission: "JFAC will gain and maintain air superiority over country X"*
- ✓ *Friendly CoG CV: "Airbases in country X are close to enemy air threat"*
  - ⇨ *Condition to establish: "NTIF IADS is fully effective above Country X"*
- ✓ *Part of mission: "JFAC will degrade enemy capabilities"*
- ✓ *Enemy CoG CV: "enemy IADS is highly centralised"*
  - ⇨ *Condition to establish: "enemy IADS is ineffective"*

DECISIVES CONDITIONS CHECKLIST

A- Prerequisites

✓ Joint level Operational design with DCs, Operational objectives, criteria for success; COMJFAC mission statement, Air objectives, risk assessment, factor analysis.

B- Determining the Conditions to be established

There is no "one" single method to develop Decisive Conditions. DCs could be derived from Factor Analysis, Risks Assessment, Mission Statement, Commander's Intent, analysis of friendly and enemy Centers of Gravity (non exhaustive list). The main reason for a conclusion, vulnerability, risk or simple fact to be selected as a DC is that it represents a goal that, once achieved, will pave the way or somehow ease the achievement of a single or multiple objectives, at the operational or the tactical level.

Determining the DCs as the combination of the following steps

B.1 DCs from Operational level materials

1. Analyse the operational level mission and the operational design.
2. Identify the DCs to which the JFAC can contribute or that should be under the primary responsibility of the JFAC.
3. Take the statement as is or, possibly, re-state it in a more Air-oriented manner.
4. Insert them in the JFAC list of DCs.

B.2 DCs from JFAC mission and CoG's Critical Vulnerabilities analysis

Consider each actor (group of actors) independently and go through the following steps for each of them:

1. Consider the actor's CoG CVs.

For each CV perform steps 2 to 5:

2. Identify what system of the force/actor is impacted.
   - ⇨ A Force is composed of systems such as IADS (including detection); offensive system; Intelligence system; communication system; logistical system; C2 system; basement system…
   - ⇨ An Actor is composed of a government (political system), a population, the economic system, the military system, a communication system, the media, Police.
3. Identify the part of the JFAC mission related to the CV.
4. Connect the actor's system impacted with the part of the JFAC mission by stating the new condition you want to be establish on the actor's system.

   Example:
   - ✓ *Friendly CoG CV: "Airbases in country X are close to enemy air threat"*
   - ✓ *Part of mission: "JFAC will gain and maintain air superiority over country X"*
   - ⇨ *DC: "NATO force IADS is FOC"*

B.3 DCs from JFAC risk analysis

1. Consider each one of the risks that were previously analysed and mitigated.
2. Identify those risks that were initially judged as unacceptable.
3. Review the mitigation measures that were identied as necessary to reduce the impact/probability of the risk in order to make it acceptable
4. Identify those measures to which JFAC can contribute to or that should be under the primary responsibility of the JFAC.

B.4 DCs from JFAC factor analysis

1. Review the factor analysis.
2. Identify the conclusions that are of primary impotance for JFAC Mission
3. If necessary re-state them as per DC writing guidance.

B.5 DCs from COMFAC intent

1. Review the COMJFAC intent.
2. Each key task listed in the COMJFAC intent should be broken down into DCs
3. A key task may be a DC by its own; rephrase it using passive voice

B.6 Verification

1. Consider all the DCs and make clusters of same domain
2. Check that all the DCs are achievable and sustainable the entire operation.

C- Outcome

The outcome of this stage is a list of specific conditions (DC) to establish by the JFAC to influence systems to contribute to the different Ai objectives.

12. OPERATIONAL DESIGN (OPS DESIGN)

12.1. Definitions

Operational Art - Application of creative thinking by commanders and staffs—supported by their skill, knowledge, and experience. This creative thinking used to design strategies, campaigns, and major operations, organise, and employ military force. Through operational art, commanders link ends, ways, and means to achieve the desired end state

Operational Design - Conception and construction of the framework that underpins an operation plan and its subsequent execution. It supports operational art with a methodology using elements of Ops design for understanding the situation and problem. It is a process of iterative understanding and problem framing to conceive viable approaches

Military End State - Set of conditions that define achievement of all military objectives. They represent a point in time and/or circumstances beyond which the UN/NATO no longer requires the Military instrument of power to achieve national objectives. The Military End State will be used to derive objectives, promote unity of effort, facilitate synchronization, and clarify risk associated with operations.

Objectives - Clearly defined, decisive, and attainable goals toward which every military operation should be directed. They are developed after the End State / Termination Criteria are defined and provide a basis for identifying tasks and describing desired effects. They will prescribe friendly goals by describing what must be achieved to reach the end state. Further, they tie tactical tasks to the military end state, they must be prescriptive, specific, & unambiguous, and they do not infer ways and/or means (i.e., it is not a task)

Air Objectives (AO) - A clearly defined and attainable goal to be achieved by the JFAC that will contribute to the achievement of the operational level Objectives (OO).

Beyond these explicit objectives, the AOPG will analyse the provisional mission and its explicit air objectives to draw out the implied conditions to be established and/or sustained. The AOPG can develop criteria for success for each air objective to assist in determining the conditions to be established.

Lines of Operation (LoO) - Logical line linking effects and DCs to an objective. The determination of LoOs will shape the development of the plan as well as the conduct of operations, by arranging mainly decisive conditions in time, space and purpose.

Effects - Physical or behavioural state of a system that results from an action, set of actions, or another effect. This is some thing that **HAS HAPPENED** (passive voice). For the Ops Design construction, 2 major categories are considered:

- **Desired Effect**: A condition that supports attaining objectives
- **Undesired Effect**: A condition that may inhibit progress toward objectives

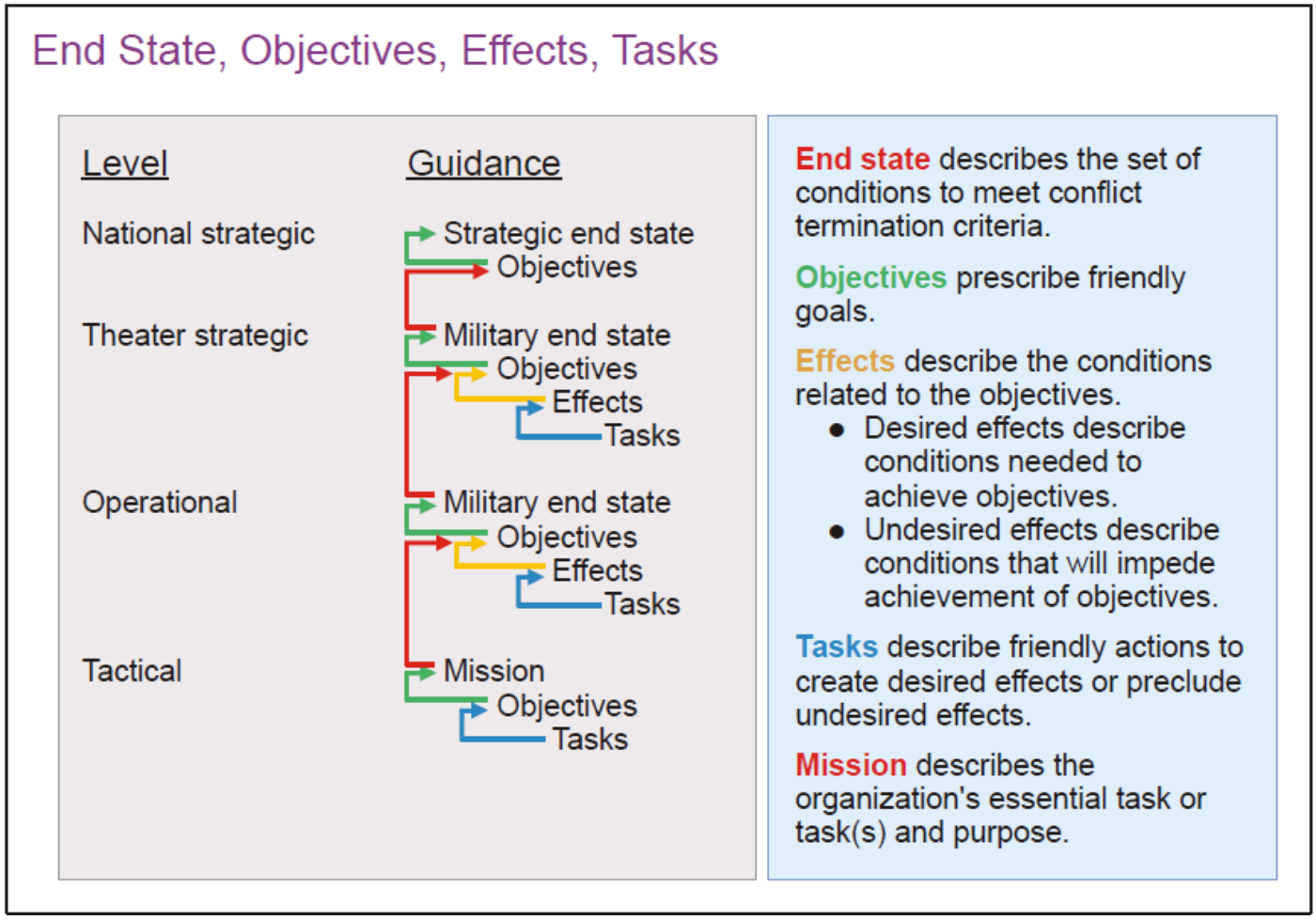
➔ *It is important when writing the effects to ensure that they are described in a way that is measurable. This ensures that a matrix can be used to test if the effect has been achieved.*

Decision Point (DP) - identified point, where it is anticipated that the Commander would need to make a decision on the course of action if it were to occur.They are linked to CCIRs.

Branch Plan/Sequel Plan - The AOPG may be able to identify possible decision points leading to the requirement for branches and sequels. In this case, a contingency option will be built into the base plan IOT retain the initiative and achieve the original objectives.

Branch Plan - Branches address the question of "what if"?

Sequel Plan - Sequels address the question of "what next?".



12.2.Operational Design and the OPP

The Operational Design (Ops design) is an expression of the Commander's vision for the transformation of the unacceptable operational situation at the start of the operation into a series of acceptable operational conditions at its end. This transformation is done through establishing Decisive Conditions (DCs) along different Lines of Operation (LoOs), leading to the achievement of Air Objectives (AOs), while contributing to the achievement of operational or strategic objectives and NATO end state.

While working through the pieces of the Ops Design, the AOPG must consult all previous work on the Operation. The purpose of all the work previously done was to understand and describe the problem, and to identify the possible solution to solve that problem.

The AOPG should find a way to frame the problem that aligns with the COMJFAC's ideas and vision, and those same items at the Joint level, and which provides a succinct and easy to understand methodology for a coherent plan, which achieves the desired end state.

The AOPG must remember that Ops design does not replace planning and COA development, but planning and COA development are incomplete without Ops Design. Remember that this is a group-oriented activity that will use the synergy and creativity of everyone, not just a single individual.

The four steps of the Operational Design process include:

- **Shared understanding of the operational environment;**
- **Problem framing agreement;**
- **Operational approach ➔ A broad, initial approach to solving the identified problem**
- **Briefing presented to the COMJFAC.**

12.2.1. Shared understanding of the operational environment

A further refinement of the results of the factor analysis, systems analysis, COG analysis. Describe the desired operational environment including:

- ✓ COMJTF desired end states and conditions
- ✓ Termination criteria. Standards met before military operations can be concluded.
- ✓ Military end state. Conditions that define achievement of all military operations

12.2.2. Problem framing agreement

A concise problem statement is the foundation of any good strategy and accomplishes two things: directs future decisions in planning and provides the logic to the planning team, the subordinate units, and partners for why the operational approach was determined.

- ✓ Describe differences between current & desired operating environment as a problem statement.
- ✓ Isolate root causes of the problem.
- ✓ Identify actions that will transform existing conditions toward the desired end state.
- ✓ Identify items to remove/provide/change keeping us from where we want to be.
- ✓ Make the problem statement simple, clear, concise, and specific.
- ✓ Craft in relation to COMJFAC mission.

No doctrinal format -- use paragraphs, bullets, or combination of both.

This is not a mission statement

12.2.3. operational approach (initiat approach to solving the identified problem)

The operational approach describes the broad actions necessary to solve the identified problem.

Many elements of operational design reflect components of mission analysis.

Lines of operation become particularly useful-in devising operational objectives and graphically relating the sequence of actions necessary- to create conditions and achieve objectives. These will inform and influence COA Development as well.

In summary, operational design is an iterative, problem-solving process that begins with developing an understanding of the OE, both current and desired. This examination leads to identifying the factors that help define the problem and its root causes. Finally, the operational approach responds to the problem statement by describing the broad actions necessary to achieve the desired system or end state.

12.2.3.1. **Determine objectives.**

- See the check list

12.2.3.2. **Determine effects and actions for each objective.**

Work on the effects and the implied actions. Stick to the question "What to do?", or "Why are we doing this. Effects should be written as if they have already been done. "JFAC FOM is attained".

Especially for the effects, do not suggest ways and means. The AOPG will identify air actions required to create the effects and establish the DCs identified. For the creation of effects, the use of both lethal and non-lethal means should be considered, as appropriate. Again, the Action is what we do to achieve the Effect, which sets in place the Decisive Condition.

You are not required to determine the numbers or even the types of aircraft which are necessary to achieve a DC, or to determine an attack axis. Just be certain that the achievement of the DC is possible with the available means

Effects are the foundation for Operation Assessment. Because of this, the AOPG should consider they both achievable and measureable. It is important when writing effects to ensure that their description is written in a manner that can be measured (use the passive voice). One way to evaluate effect wording is to begin to evaluate what measures of effectiveness (MOEs) could be monitored over time to confirm that the effect has been created. MOEs will be further developed during the planning process and execution.

✓ Physical and/or behavioral states that result from an action(s) or other effect.

✓ Considerations — each desired effect should:

- Link directly to one or more objectives.
- Be measurable.
- Not specify ways/means for accomplishment.
- Be distinguishable from the objective it supports as a success condition, not an objective or task.
- Focus on systems (think PMESII).
- Express a single system behavior.
- Be written without adverbs or adjectives.

- Describe an observable behavior.
- Be written in active voice

✓ Technique:

- Analyse objective
- Identify key systems associated with objective
- Identify key behaviors
- Write the effect statement

12.2.3.3. **DP (Decision Points)**

Using objectives and effects, give initial consideration to decision points (especially IAW the COMJTF Ops Approach, if available).

At this point, it is difficult to provide decision points with fidelity. Decision points will continue to evolve through not only operational design but also through the steps of planning process (e.g. CClRs feeding decision point refinement during Mission Analysis).

12.2.3.4. **determine Lines of Operation (LOO) .**

- LOO: link effects and DCs to an operational objective, with normally one LoO per air objective. The determination of LoO will shape the development of the plan as well as the conduct of operations, by arranging operations in time (phases), space and purpose.

- Describe and connect a series of decisive actions that lead to control of a geographic or force-oriented objective. Tie offensive, defensive, and stability tasks to geographic or positional references.
- Generally consist of actions executed according to a well-defined sequence.
- Multiple LOOS can exist at the same time (parallel operations). Synchronize activities along complementary LOOs.
- Determine Branches and Sequels: The AOPG may be able to identify possible decision points leading to the requirement for branches and sequels, at this early stage, and amend the operational framework

- Techniques:

  Based on numerous AOPG's, 2 ways are depicted below:

  ✓ Nominate one team per Air Objective.

  Pros: the team starts and ends with their Air objective and has a full understanding of the process to get the Air objective achieved

  Cons: the team has to continously check the other lines of operation to make sure their DCs are phased together.

  or

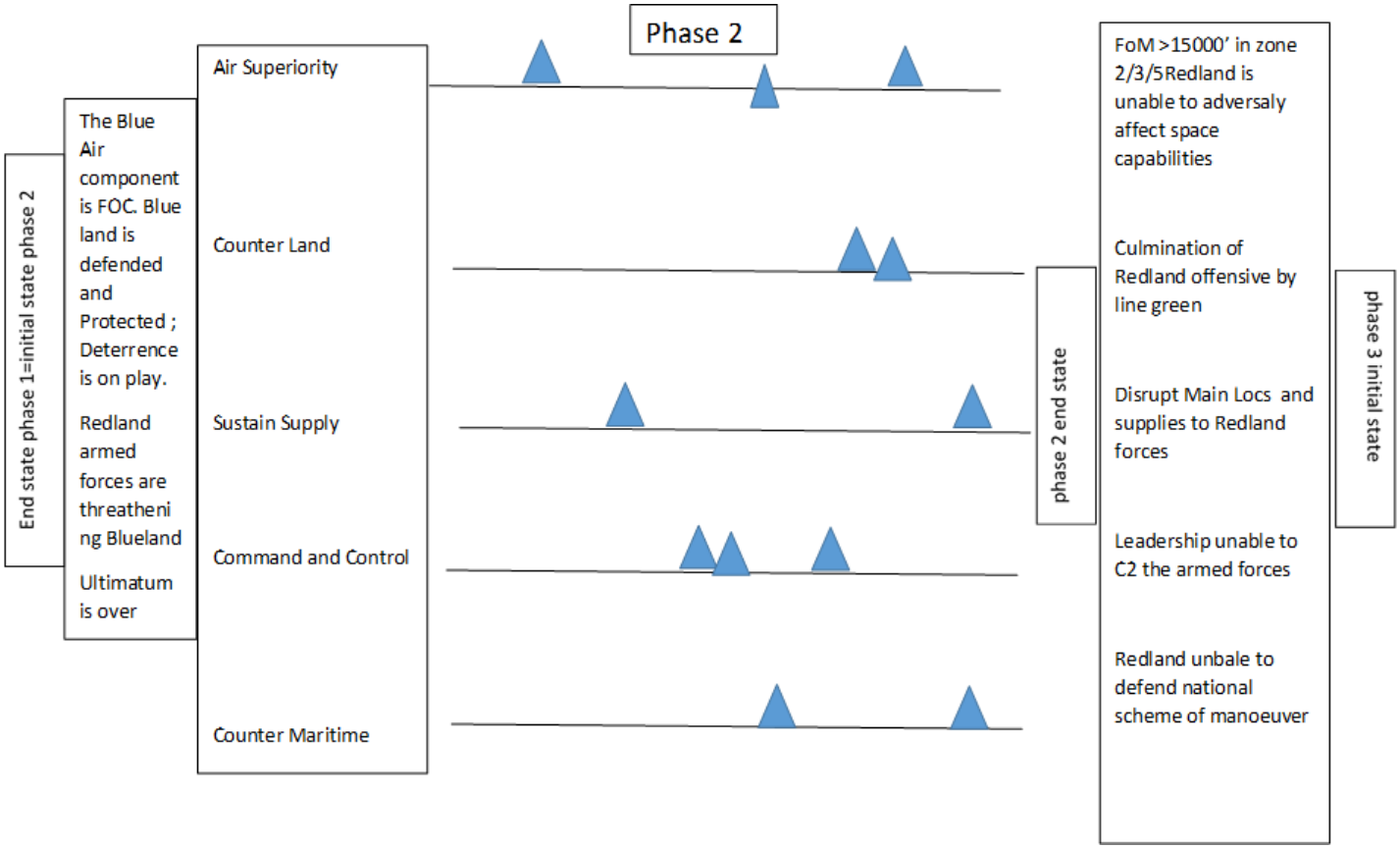
  ✓ Nominate one team per phase: the first group begins with phase 1 : their starting point is the initial state of the phase 1 and ends with the end state of the phase 1 they have to determine. This phase 1 end state is the starting point for the group

2. The group 2 works on phase 2 and stops to the phase 2 end state they have to find out and so on.

Pros: all LoO are synchronised and the team has a perfect understanding of what happened in the phase they are in charge of.

Cons: Try to have all expertise present in each team. The teams need to cross check to get the full picture and not be trapped in their phase.

✓



- ✓ Concentrate exclusively on your own line of operation, as if it were the only LoO
- ✓ Start with decisive conditions. To what objectives are they related? what must be achieved exactly and what are the big steps to do that? What actions need to take place on the decisive conditions to achieve an objective?
- ✓ Consider effects. What effects are needed to achieve an objective? What decisive conditions are related to those effects? What decisive actions need to occur?
- ✓ Arrange the decisive actions. To what objective(s) or desired conditions are they related? Consider time, space, and/or function.
- ✓ Limit the number of LOO to no more than six.
- ✓ Assemble the LoO as followed:

The AOPG leader will gather the team leaders to puts the LoOs together on a single board (PPT slide will be done later). At first, the LoOs should only include the DCs. Then, all the AOPG members will participate in the Ops Design building (refine,

move, delete dual DCs, etc). This should highlight that there are some similar DCs on different LoOs and on different points in time. The important and difficult task now is to decide which common DC stays with which LoO and in which order. While it will be time consuming, the AOPG must take their time with this step as this layout with all the DCs in place will be the final Ops design of the Air Component.

12.2.4. **Presenting the ops design to the COMJFAC**

Before presenting the ops design to the COMJFAC, the AOPG should proceed to a final verification: check if all the mitigation measures, conclusions and all the bits and pieces from the analysis are reflected in the Ops Design. Special care should be taken to find any discrepancies between the previous details and the final result. Those must be discussed and corrected.

Once the verification has taken place and all discrepancies have been addressed, the complete Ops Design should be presented to the AOPG to have it challenged by the group and ensure that all elements were taken into consideration, discrepancies discovered and everybody has the same understanding of the mission before looking for a meeting with the COMJFAC.

The operational design briefing is a mean to frame a discussion, more likely a series of discussions, with the commander to help revise understanding of the Operational Effects, frame/reframe the problem; or change the operational approach. Such discussions may reveal a shift in the problem such that the current approach is no longer valid. It is also a venue in which to receive COMJFAC guidance for the ensuing Mission Analysis phase of the planning process.

Briefing content

- Current/Desired Operational Environment
- Centers of Gravity
- Problem Statement
- Objectives and Effects
- Decisive/Decision Points
- Lines of Operation

Operational Design Methodology Summary

- ✓ Understand the strategic direction and guidance
  - Strategic ends to be achieved and associated Constraints/Restraints
- ✓ Understand the strategic environment
  - Policies, diplomacy, and politics
- ✓ Understand the operational environment
  - Context in which the design will be applied
- ✓ Define the problem
  - Tensions between the existing and desired conditions
- ✓ Identify assumptions needed to continue planning
  - Strategic as well as operational
- ✓ Develop options (the operational approach product)
  - Guides planning and shapes the Concept of Operations
- ✓ Identify Decision Points and Decisive Conditions (external to the organization)

Refine the Operational Approach and develop planning guidance

NOTES

OPERATIONS DESIGN CHECKLIST

A. Prerequisites.

✓ NATO End State, Joint Military End State, Joint Operational Design (draft), JFAC Mission, Air Objectives, CoGs.

B. How to proceed

B.1 Understand the Operational Environment

1. Review the NATO End State, the Joint mission statement and the OPG
2. Review the Joint Operational design (Joint objectives, LoOs, Phases, DCs, DPs)
3. Review Termination criteria (standards met to conclude military operations).
4. Review the Key factors, limitations and risks
5. Review the CoG analysis.
6. Review the COMJFAC mission and the Commander's intent.

B.2 Frame the problem

1. Describe differences between current & desired operating environment
2. Isolate root causes of the problem.
3. Identify actions that will transform existing conditions toward the desired end state.
4. Identify items to remove/provide/change keeping us from where we want to be.
5. Make the problem statement simple, clear, concise, and specific.
6. Craft in relation to COMJFAC mission.

⇨ *No doctrinal format -- use paragraphs, bullets, or combination of both.*

B.3 Develop an Operational Approach

1. Determine Air Objectives

⇨ *2-6 objectives per operation.*

⇨ Well-defined, broad/overarching goals towards which an operation is directed.
⇨ Each links directly or indirectly to a higher-level objective or to the end state.
⇨ Must be prescriptive, specific, and unambiguous.
⇨ Does not infer ways or means, not written as a task, not statements of action (how)

2. LoOs building (*One LoO per air objective)*

⇨ Determine the effects and actions
⇨ Gather all the Decisive Conditions determined in previous steps
⇨ Sequence DCs according to the phases of the operation
⇨ Determine Decision Points (they are linked with CCIRs)
⇨ Assemble the Lines of Operation
⇨ Final Verification

3 Prepare initial Branch and Sequel Plan ideas based on Decision Points

- ⇨ Determine associated Branch (BP) or sequel plans (SP)
- ⇨ Insert the BP on the most appropriate LoO and timing
- ⇨ Name the BP / SP in order to give a rough idea of what must be developed

4 Final verification

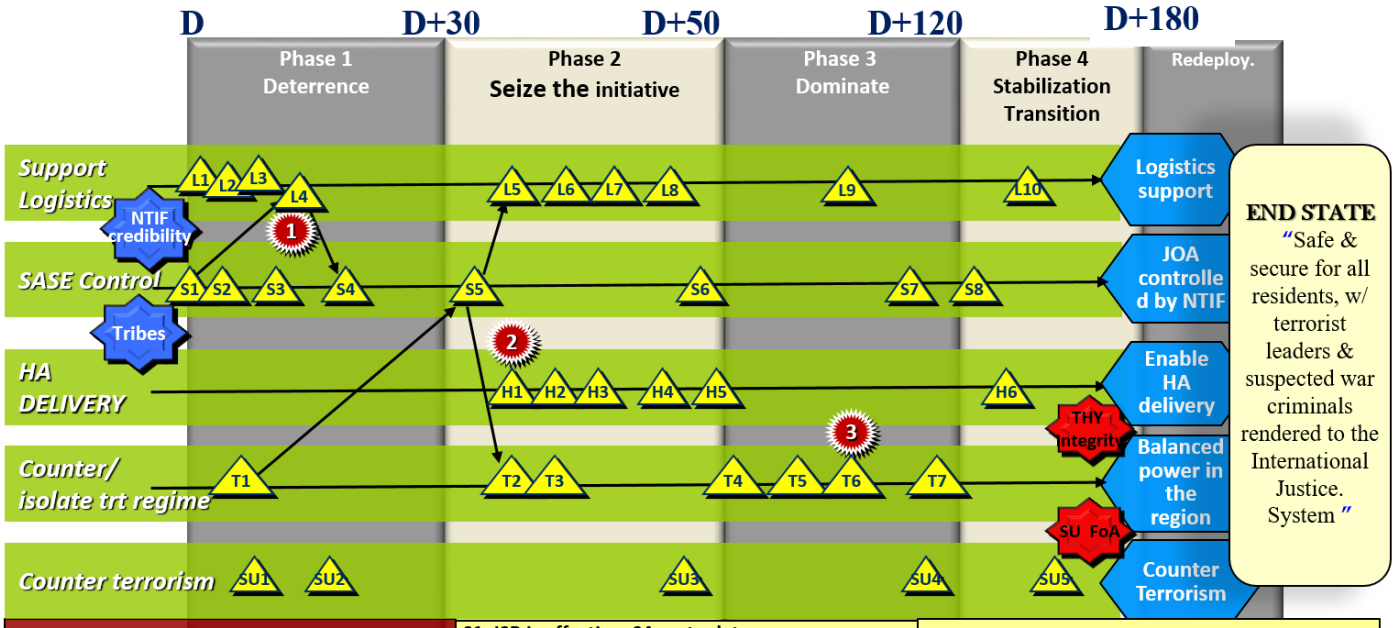
B.4 Brief the COMJAC on the ops design

Briefing content

Current/Desired Operational Environment	Objectives and Effects
Centres of Gravity	Decisive/Decision Points
Problem Statement	Lines of Operation

C. Outcome

At the end of the Mission analysis step, the AOPG must propose an initial operational framework. Merged with the COMJFAC intent, it will become the initial Operational Design. It represents an overview of the COMJFAC vision to deal with the crisis.



Decision points→
1. APOD/SPOD not available in IPA
2. NTIF doe not seize RIV
3. NTIF does not seize Albertown

S1. ISR is effective- SA up to date
S2. NTIF Liaises with tribes
S3. NTIF controls IPA SRP
S4. NTIF protects IPA
S5. NTIF neutralizes A2/AD over AOOs
S6. MCC controls channel + NW of THY
S7. NTIF controls the Purho province
S8. NTIF FOM throughout the JOA

H1. RIV Airborne Ops successful
H2. IDPs perimeters are protected
H3. LOCs are protected in RIV
H4. SPODs/APOD operational and secured in RIV
H5. RIV is secured
H6. UN Envoys FOM

T1. NTIFs operates IO (TA = TRT forces morale)
T2. Neutralize TRT SA
T3. Neutralizes the TTNC (deny TRT cyber ops)
T4. Amphibious Ops successful
T5. NTIF controls LLOCs to Albertown
T6. NTIF seizes Albertown
T7. War criminals captured

SU1. NTIF counter SU in SRP (contributes to reduce TRT Leadership)
SU2. NTIF minimizes SU influence using media
SU3. NTIF neutralizes SU known sites
SU4. SU activities ineffective in the JOA
SU5. SU leaders are neutralized

13. TIMINGS, FORCES/CAPABILITY ESTIMATE AND C2 REQUIREMENTS

13.1. Definitions

Critical timings: Those timings, critical for planning, are related to crisis management, activation of forces, pre-deployment of enabling forces, initial entry, transfer of authority and, when known, the transition to follow on forces. Those timings are composed of planning milestones and operational timings.

Initial force/capability estimate For that purpose, AOPG must conduct a high level troops-to-tasks analysis to identify the major force/capabilities required for the operation.

This will allow identification of any significant differences that may reflect an imbalance between required objectives and the means likely to be available. Significant issues may constitute operational risks and should be brought to the attention of the Commander.

C2 Requirements: They are driven by several factors determined during the mission analysis and the development of the operational framework, in close coordination with JOPG. They should include:

The geographic dispersion of forces in the theatre and the JOA.

The different LoOs and the nature and purpose of military actions in concert with relevant national and international actors.

The size and functional composition of the deployed force.

Critical liaison, coordination requirements and span of control.

CIS points of presence (PoP) and information exchange requirements (IER).

➔ *CIS PoP are under NCIA responsibility while IER are under Component responsibility.*

The possibilities for C2 reach back and Cyber Defense (CD) requirements.

13.2. OPP Vs Timings, Forces estimate and C2 requirements

Operations Planning process requires a comprehensive knowledge of different timings that are critical for decision-making process and conduct of the operations. Besides timings, it is important to estimate initial force or capability required for the JFAC mission.

Finally, COMJFAC need a comprehensive approach for the C2 requirements to be able to develop CIS architecture and command and control procedures for the joint air operations according to the JTF structure, location and other CCs specificities.

13.2.1. Critical timings

In order to identify critical timings, AOPG must highlight :

- crisis management timings (Legal issues with timings restraints/constraints and political arrangements (ultimatum, resolution, etc.)
- Activation of forces (To have forces ready to be deployed on time)
- Pre-deployment of enabling forces (OLRT, CIS teams, etc.)

- Transfer Of Authority (TOA) (OPCON / National ➔ Alliance)
- Initial entry and transition (if known)

Critical timings from planning milestones are usually CoA DB to COMJFAC, CONOPS back brief to COMJTF, SUPPLAN issued for approval and 1st AOD

Critical Operational timings are composed of JOA activation, Deployment, Operational phases.

13.2.2. **Develop initial force/capability estimate**

The process is simply to update the estimate of required operational capabilities based on the mission analysis, and the development of the operational framework, and to compare it with the force capability requirements provided in the SPD.

NOTES

13.2.3. Estimate C2 Requirements.

13.2.3.1. The geographic dispersion of forces in the theatre and the JOA.

AOPG must analyse JOA designated by SACEUR in order to determine operational requirements, such as entry points, LOC, Ops area, force and logistic requirements, etc.

It will also assist the AOPG to determine if the provisional JOA as proposed in the SPD/OPG meet the COMJFAC's needs.

13.2.3.2. Required C2 Functions and Locations

AOPG must appreciate what actions will be accomplished, where and by what kind of forces. This should include evaluating how C2 could be phased if the COMJTF will deploy (i.e. through the use of Functional and Initial Command Element (FCE & ICE).

13.2.3.3. Geographical and Functional Areas of Responsibility

Based on the determination of geographical and functional areas of responsibility, the Commander can begin to appreciate the requirements to organise the command structure.

13.2.3.4. Critical Liaison and Coordination Requirements

Based on previous works and on COMJFAC responsibilities (ACA, ADC), a need for liaison and/or coordination with international and governmental authorities may be highlighted. The location of those authorities in the area may require a permanent high level C2 presence which will influence C2 requirements.

13.2.3.5. Span of Control

Following military principles, the Commander will want to balance the advantages and disadvantages between a relatively flat organisation and a multilevel hierarchy.

Planners will propose options to the commander.

13.2.3.6. CIS Points of Presence and IERs. (Information Exchange requirements)

Depending on the theatre location and communication infrastructures, COMJFAC may have to rely on deployable CIS that will have a limited number of PoP, which in turn will limit the number of deployed HQs locations. NCIA will provide the support for the C2 structure up to the COMJFAC.

Inside the component, this is the role of the Framework nation (Standby NRF) to deal with the CIS architecture (JFAC HQ, JFAC entities embedded in other CCs or JTF HQs and Air units). Depending on the nature of the operation, different Functional Area Services may be supported.

13.2.3.7. Cyber Defence (CD)

Tthe operational context and the crisis environment may drive the AOPG to consider the possible scope of CD activities and protection measures to support the C2 organisation.

13.2.1. JFAC HQ structure and liaison

Provide the COMJFAC with a JFAC HQ organisation and liaison based on C2 requirements for this operation.

NOTES

TYPICAL MISSION ANALYSIS BRIEF (*MAB*)

1. **Introduction**
2. **Review of Situation**

   1- Current Strategic Situation;

   2- Adversaries, Friends, Neutrals;

   3- Political Direction and Guidance. NATO end state; Strategic non-military objectives; Political limitations; additional direction and guidance.
3. **Higher Headquarters Direction and Guidance**

   1- Strategic military mission; Intent; Military strategic objectives; Military strategic effects; Preconditions for success; Assumptions; Limitations; Provisional operational mission (including objectives); Additional direction and guidance.
4. **Mission Analysis**

   1- Key Factors and Conclusions;

   2- Operational Limitations (Constraints, Restraints);

   3- Assumptions;

   4- Operational Risks.
5. **Operational Design**

   1- JFAC Mission (including Operational Objectives) and Operational COGs;

   2- Initial Commander's Intent;

   3- Operational Framework. Possible Lines of Operation, Decisive Conditions, Effects, Actions;

   4- Complementary Non-Military Actions and Assessment of Possible Branches and Sequels

   5- Provisional Component Missions (including Objectives).
6. **Initial Force/Capability Estimate**

   1- Forces Available for Planning Purpose (If given); Estimate of Forces / Capability Required.
7. **Command and Control**

   1- Preliminary C2 Arrangements; Theatre of Operations and Joint Area of Operations.
8. **CCIR**

9. Critical Operational Requirements

1- Critical operational support and resources requirements;

2- Pre-conditions for Success;

3- Rules of Engagement-Use of force;

4- Requirements for interaction with international or national actors;

5- STRATCOM/Information Strat. Requirements. Pol. guidance: Msg, themes to avoid, audiences;

6- CRM.: Declared CRMs. / Additional CRM requirements;

7- Other Critical Operational Requirements. (i.e. targeting, TST, PR).

10. Critical timings

1- Operational timing and planning milestones.

11. Requests to be submitted to JTF/COMJTF

12. Proposed Commander's Planning Guidance

1- Planning Guidance to Staff including on the following sorts of issues:

Opposing COAs to develop;

Criteria for COA comparison;

Broad terms on COAs to develop.

2- Direction to AOPG;

13. Conclusion

14. Approvals

1- Operational Framework;

2- JFAC Missions updates;

3- Preconditions for Success;

4- Proposed Planning Guidance;

5- ROE requirements;

6-Additional CRMs;

7- Submissions to COMJTF/JTF.

15. Responses from Commander

1- Commander's Initial Intent:

Commander's Planning Guidance and Guidance to Planning Staff;

2- Direction to Subordinate Commanders and Additional COM Guidance.

PART C– JFAC ESTIMATE / COA DEVELOPMENT & COMPARISON

Mission analysis inputs and outputs

Key inputs	Steps	Key outputs
• COMJFAC approvals • JOPG and/or COMJFAC guidance for COA dev. • Adversary COAS	**COA Development**	• Friendly air COAs • Synchronisation of joint COA and JFAC COA
• Friendly air COAs • Adversary most likely/dangerous COAs • wargame method (phase / DC / line of operations ?...)	**COA Analysis & Wargaming**	• Refined, valid JFAC COAs • Strengths & weaknesses • Branch : risks/ sequel requirements:opportunities • COMJFAC decision points & updated CClRs • Advantages/disadvantages • Additional force/capability requirements • Synchronisation requirements
• Evaluation criteria • Wargame results	**COA Comparison**	• Pros & Cons of Air COA's • Air COA Proposal to COMJFAC
• COA Decision briefing	**COMJFAC Approvals**	• JFAC COA Selected by COMJFAC • Approved JFAC Operations design • COMJFAC refinements requested • COMJFAC direction and guidance for CONOPS dev. •
• Approved air CONOPS • Updated staff estimates	**Plan Development**	• Approved Joint Air Operations Plan with appropriate annexes

After identifying the operational problem during the mission analysis, the AOPG must determine **how best** to conduct operations that will accomplish the JFAC mission effectively and efficiently. Courses of Actions describe:

- **WHY** action is required - purpose of the action (PURPOSE)
- **WHAT** type of action conducted – see essential tasks
- **HOW** action will occur - method of conducting operation using major resources available
- **WHERE** action will occur - The JOA/areas of action (SPACE)
- **WHEN** action will begin or must be completed (TIME)
- **WHO** will take action – forces, commander, and/or other capabilities

NOTES

1. COURSES OF ACTION (COA) DEVELOPMENT

1.1. Definitions

COA: Course Of Action: Possible ways (operations) and means (forces) by which the mission might be achieved.

Wargame: a staff tool that allows you to play out selected friendly COAs against selected opponent CoAs in order to:

- Determine strengths and weaknesses
- Refine the friendly COA
- Reinforce recommendation of the best COA to the COMJFAC.

Commanders' criteria: A set of criteria determined by the COMJFAC that all COAs should meet. The COAs will differ as to how well they satisfy the different criteria. The COMJFAC will provide criteria weights to segregate the COAs.

COA Risk Evaluation: The COA risk evaluation provides the COMJFAC with an appreciation of the risks for each COA against specific aspects of them (e.g. mission (including operational objectives), DCs, desired operational effects, etc.), as well as how those risks could be mitigated, including requirements for branches and sequels.

1.2. Component estimate and COA development brainstorm

A course of action is a potential solution to accomplish the assigned mission.

The AOPG develops different COAs in order to provide unique choices to the COMJFAC, all intended to achieve the air objectives, supporting the joint objectives and the end state.

➔ *A good COA following the Commander's guidance provides also flexibility to meet unforeseen events during execution, and position the forces for future events.*

Essential tasks identified during mission analysis MUST be common to all potential COAs

Requirements and **constraints** are common points applicable to all COAs and they should be established in a list, in advance to the COA production.

The **main operational activities** that are critical to the operation have to be identified clearly, in order not to lose the focus of the battle.

The **major possible choices** and **alternatives** are to be agreed directly with the Commander well before starting each COAs: Do we attack from east? Do we start to attack airbases or tanks first?

The "**How**" to use capabilities made available to accomplish the "What" derived during Mission Analysis/Op Design, possibly framed around time, space and purpose must meet the COMJFAC's intent. The COA drives the way how we pass from an unacceptable situation to an acceptable situation.

As in Mission Analysis, **commander involvement is critical**. Following the MAB, with his own approvals and decision, the commander provides planning guidance to the AOPG to allow planners to develop a set of COAs within the time available.

The COMJFAC seizes this opportunity to test and validate options through the COAs:

- How many COAs should the staff develop? Do time and manpower allow one, two, or three COAs? What makes sense based on the scenario?
- In what broad ways should the COAs vary? (Consider: purpose, objectives, timing,sequencing, resources, operations areas, coalition participation)
- Operational limitations – Constraints/Restraints
- Criteria by which the COAs will be evaluated
- When (how frequently) are planning updates needed or desired
- Broad guidance outlining ends/ways/means/risk
- Risks to be mitigated and risks that may be accepted
- COMJFAC support to deterrence
- COMJFAC contributions to the military end state
- Force flow, force size and mix, basing, arrival priority, and days of supply with each unit
- Friendly and adversary COGs and critical vulnerabilities – to protect or exploit
- Amount of focus on capabilities versus will
- Use of operations in the information environment to shape attitude, perceptions, andbehaviors

1.3. COA development process

Time permitting, develop at least two COAs, each of which can achieve all COMJFAC essential tasks and produce the necessary end state conditions. Although provided by the COMJFAC, the Air COA is ultimately part of the COMJTF's COA and requires approval by the COMJTF to ensure its fit into the Joint Force's scheme of maneuver and phasing.

COA Development Steps :

1. Develop COAs (BRAINSTORM)
   1.1. Review information from Mission Analysis and the operational design (if available)
   1.2. Determine COA development technique –simultaneous or sequential
   1.3. Consider the elements of operational design
   1.4. Develop broad alternative COAs
   1.5. Analyse forces/capabilities, including Space/IO/CYBER and force/log flow issues
   1.6. Explore command relationships
   1.7. Integrate staff estimates/updates
   1.8. Develop COA narrative, key themes, and messages
   1.9. Test the validity of each COA (this really occurs throughout all COA Development)
2. Chart/visualise COAs (ORGANIZE AND SYNCHRONIZE)
   2.1. Analyze Mission Analysis data and develop an operational timeline
   2.2. Separately translate COMJFAC specified/implied tasks into effects-based objectives by general phases

2.3. Identify sequencing of the operation for each COA (as appropriate)
2.4. Identify main and supporting efforts by phase
2.5. Develop initial COA sketches and statements (differentiation)
2.6. Test the validity of each COA again
3. Prepare COA concept of operations statement, sketch, and task organization
4. Continue vertical and horizontal parallel planning

1.4. COA development process

With the initial requirement satisfied, the AOPG has to determine how to differentiate the COAs. This is the moment in which the AOPG splits. Each COA is examined and compared from different functional perspectives to identify inherent advantages and disadvantages, as well as to determine key aspects to be evaluated later on during the wargaming, for example **Decision Points**, **risks** and **branch plans**.

Each COA should answer the following questions:

- At which systems are the air operations directed?
- What is the sequence of the actions?
- Where the air operations will be conducted?
- What message is to be delivered to the main actors?
- What non-kinetic actions can support the COA?
- What are the forces required to create the desired effects?

➔ *Planners should achieve a balance between tasks and resources*

The work is to be detailed enough to include EFFECTS and ACTIONS, and must also retain a decent level of flexibility. AOPG Director is to monitor the different CoAs to assess their exclusivity.

The results of COAs comparison, wargaming and validation are presented to the Commander during the DECISION BRIEFING (DB), in which the Commander will choose one single COA, depending also from information that we could or couldn't have during the COA development. The planners should apply the following matrix to mentally drive the brainstorming for the CoA development.

TOPIC	QUESTION	NOTES
1: Requirements	Which requirements are in common for the different COAs?	
2: Constraints	Which constraints are in common for different COAs?	
3: Activities	What are the critical activities?	How to create the effects?
4: Choices	Why one or another?	Coordinate with COMJFAC and split the AOPG
5: When	Sequence of events?	Consider the DC sequence from the ops design
6: Who	Mainly friendly: army / air / land ?	
7: Where	Field of battle? JOA	
8: What to target	Draft of targets list ready?	Effects of targeting (msg to the enemy)

1.5. COA viability test

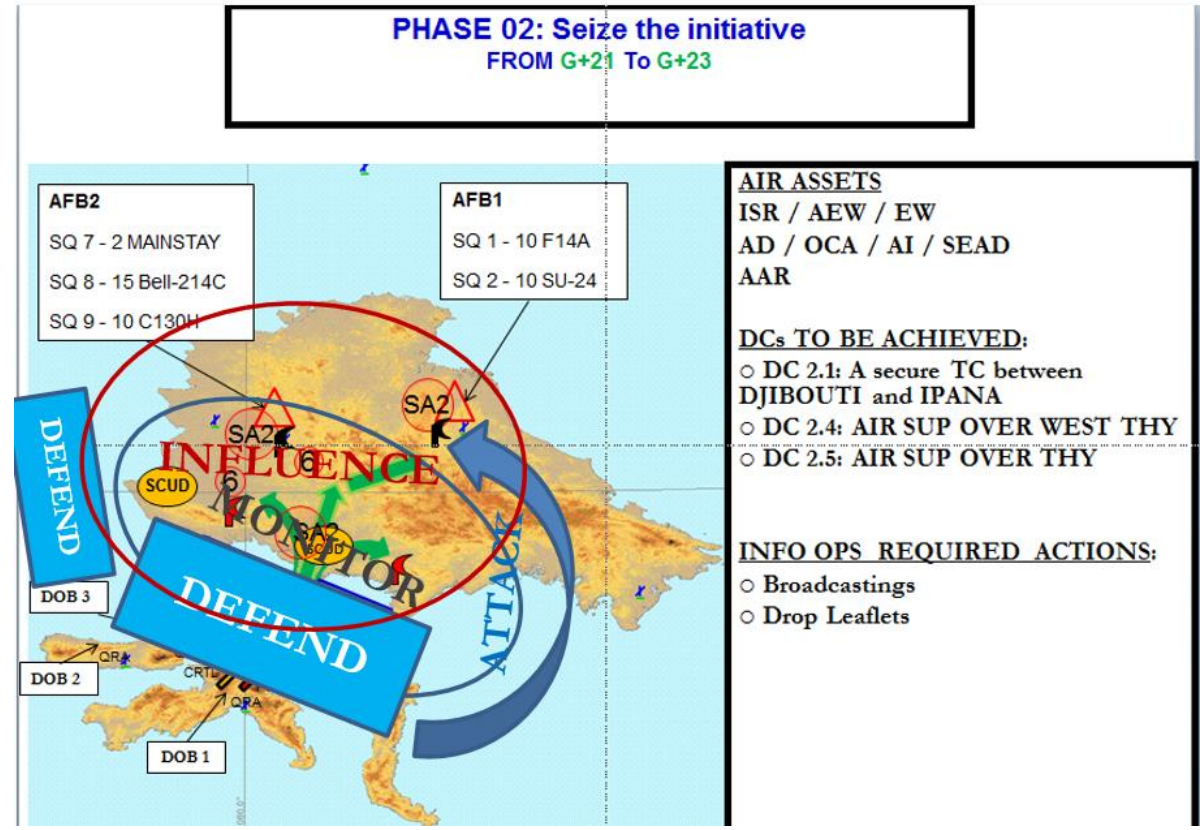
The next step for the AOPG is to test each COA through six criteria (FACCES):

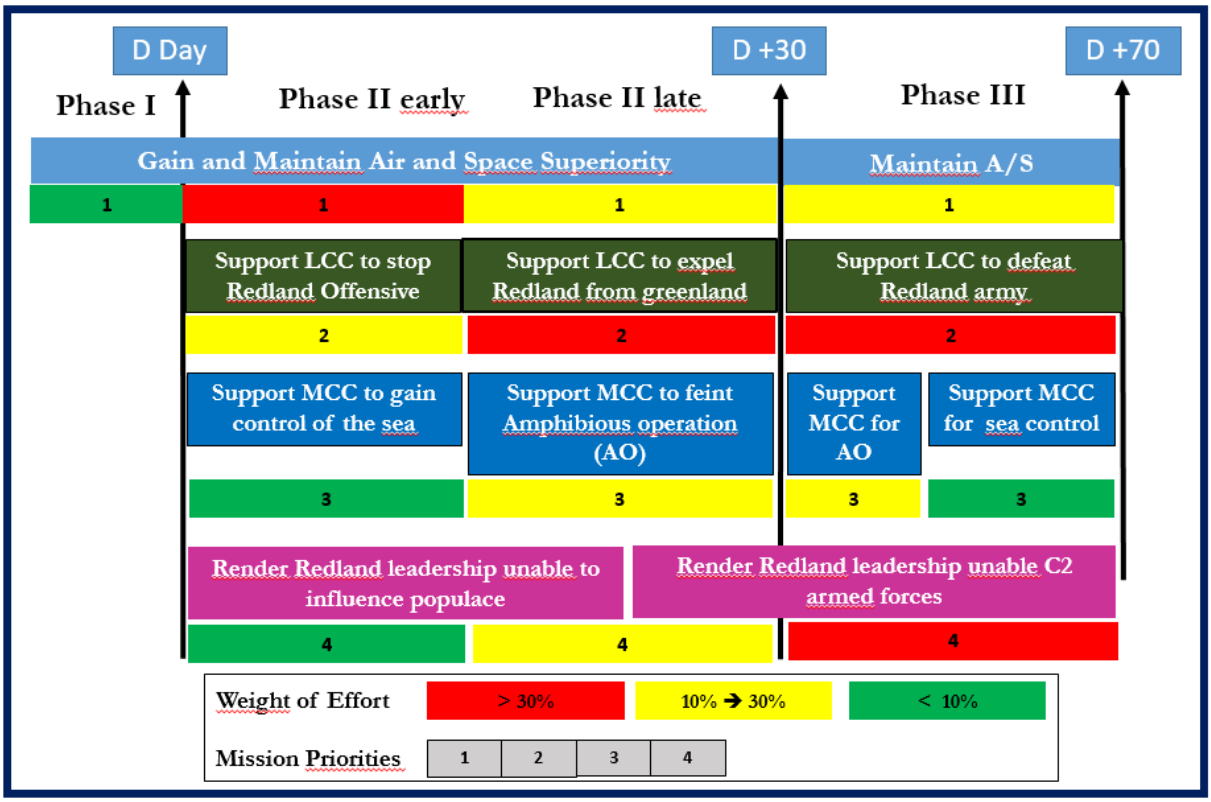
- **Feasibility**. Is the COA possible given the time, space and resources likely to be available and the operational environment?
- **Acceptability**. Are the likely achievements from the COA worth the expected costs in terms of forces deployed, resources expended, casualties suffered and levels of risk?
- **Completeness**. Is the COA complete? Does the COA answer the when, who, what, why and how questions?
- **Compliance.** Does the COA comply with NATO doctrine?
- **Exclusivity**. Is the COA sufficiently varied from other COAs to clearly differentiate its comparative advantages and disadvantages?
- **Suitability**. Does the COA accomplish the mission and comply with the planning guidance?

If at any time a COA does not meet any of these criteria, it must be corrected or discarded.

1.6. COA development outcome

At the end of this test, the AOPG should prepare each COAs for the wargaming step, via an operational graphic that illustrates the spatial aspects, using map sketches. Here we have an example of what could be the graphic output.





Operational Timeline

The AOPG will eventually include a detailed plan for each phase to include a strategy-to-task methodology -- a hierarchy of objectives, tasks, and associated measures/indicators that will provide a framework for coherent phase plans.

COA DEVELOPMENT CHECKLIST

A- PREREQUISITES

- ✓ Commander's approved mission analysis and JFAC Operational Design;
- ✓ OPD and COMJFAC planning guidance including Commander's initial intent and orientation for COA development and selection (COMJFAC criteria);
- ✓ Feedback from the OLRT (Site survey).

B- HOW TO PROCEED

B.1 Before developing COAs

1. Get from ACCE the common points and/ or information on the joint level COAs.
2. Identify AOPG personnel to play the role of the enemy (red syndicate) and to adapt or develop more in details the most dangerous and most likely enemy COAs developed by JOPG in order they can be useful during wargaming.
3. Identify the restraints and constraints regarding logistics and force protection issues. (Measures and actions).
4. From the COMJFAC D&G provided at the end of the MAB and according to the number of COAs developed in the JOPG, JFAC director must identify the different options and select the number of COAS to be developed, according to AOPG manning and time constraints.
5. Split the AOPG into different syndicates, each of them focusing on one COA and including planners that were involved in friendly forces analysis in the previous step of the component estimate.
6. Each group should assess the opposing air forces and/or the enemy COAs.

B.2 Development of COAs

1. Prepare the material in support of the development of your COA:
   - ⇨ Sort all the PG (Planning Guidance) from the Factors Analysis excel matrix;
   - ⇨ Sort the friendly Forces and enemy COG conclusions;
   - ⇨ List the mitigations measures identified during risk analysis;
   - ⇨ List the different DC to achieve during the different phases;
   - ⇨ List the effects in support of those DC;
   - ⇨ List the entry point and the different airports with their characteristics;
   - ⇨ List the Air Assets from the different components with their capabilities;
2. During the overall development process AOPG director and/or COA leaders must consider these criteria to assess the viability of the COAs:
   - ⇨ **Suitability**. Does the COA accomplish the mission and comply with the OPG?
   - ⇨ **Acceptability**. Are the likely achievements from the COA worth the expected costs in terms of forces deployed, resources expended, potential casualties, collateral effects, media and public reaction, and levels of risk?

- ⇨ **Feasibility**. Is the COA possible given the time, space and resources likely to be available and the operational environment?
- ⇨ **Exclusivity**. Is the COA sufficiently varied from other COAs to clearly differentiate its comparative advantages and disadvantages?
- ⇨ **Completeness**. Do you address all the ops design DCs in your COA (phase by phase)? At the end of the development, is the COA complete?
- ⇨ **Compliance with NATO Doctrine**: Does the COA implement Allied Joint Doctrine to the maximum extent possible?

At any stage of the COA development, you must identify the ISR needs; how your COA can be supported and sustained (Log issues);how your assets are protected; other CC support requirements.

3 Start with the deployment of your assets that could be challenged from the beginning.

4 From the friendly Forces COG conclusions develop the initial tasks to protect the vulnerabilities of your COG;

5 From the enemy COG conclusions develop the tasks/effects to influence/target the enemy COG vulnerabilities.

6 Consider developing actions for each campaign phase issued by JOPG (that will constitute the CONOPS). As a guideline for the COA DB, consider preparing one slide for each phase as a minimum and one slide presenting the appropriate timeline.

7 To consider the plan complete, try to challenge it using the questions below:

- ⇨ What is the sequence and purpose of the main actions required to create the required Decisive Conditions? **(WHY?)**
- ⇨ What effects are intended by the main actions? **(WHAT?)**
- ⇨ What system/system-elements are actions directed at? **(WHERE?)**
- ⇨ What military and complementary non-military actions are required? What message must be communicated to the main actors? **(HOW?)**
- ⇨ What are the main forces/capabilities required to carry out the main air actions and create the desired effects? **(WHO?)**
- ⇨ How long will it take to the forces/capability (WHO) to achieve the intended effects (WHAT)? **(WHEN?)**

8 Review the 2 enemy COAs (MD and ML) to assess the own COA effectiveness.

9 After this review, you should be ready to wargame your course of action against the enemy COAs, according to AOPG director orientations.

2. WARGAMING

2.1. Wargaming staff and definitions

Referee: Final arbiter regarding elements that require a decision (What will be assessed?), the referee makes the final decision regarding effects that cannot be adequately measured and enforces discipline of the participants regarding time and 'Golden Rules'

Coordinator: Briefs on basic situation, if necessary and determines initial situation. Enforces discipline of the participants especially regarding adherence to decisions and content

Team leader: Illustrate the activities of the actor during a turn and react (or counter react) during next turns.

Team deputy: Provide support to Team leader and enable to precise some points during questions of understanding

Scribes: Document results in the cognition phase, for each team (blue and red)

SMEs: Provide expertise when asked. They are seated on the background.

Initial situation: With this statement, the referee sets the scene or operational situation of the different actors to start the wargame.

Illustration of activities: Provide an overview of all the activities of an actor, regarding the full spectrum of Air mission types.

Activities reconnoitred: Activities that the actor can detect, identify or visualise because of its capabilities or its losses. The team leader should also precise what the actor cannot detect from the activities of the opponent.

Questions of understanding: Questions made by the opponent actor after the illustrations of activities of a team.

Cognition phase: This phase helps in determining the resulting conclusions by the referee after a short review of the conclusions by each team's scribe.

2.2. Component estimate and wargaming

Before finalising the COAs it is necessary to assess them against the enemy COAs to make sure, that all possible actions are taken into consideration.

Planners must consider wargaming as a mandatory step and must engage their commander with this mindset.

Wargaming is a flexible instrument designed to compare, evaluate and improve COAs. It gives an opportunity to examine each COA from a different perspective in order to:

- **identify inherent advantages and disadvantages;**
- **determine strengths and weakness.**

Benefits of Wargaming are listed below:

- Play out a selected friendly COA against a selected opponent COA
- Visualize the execution of an operation
- Gain insight into opposing capabilities and potential actions
- Anticipate possible events and develop mental agility to address them
- Explain the sequence of planned operation's phases in time and space
- Determine strengths and weaknesses
- Determine required amount of coordination between forces
- Refine the friendly COA
- Identify potential risks and opportunities (Branches and Sequels)
- Recommendation of the best COA

2.3. Wargaming process

2.3.1. Golden rules

- ⇨ *All participants follow the same rules;*
- ⇨ *Wargaming is not to be used to justify or defend individual COAs;*
- ⇨ *Wargaming is a process and not a forum for discussion;*
- ⇨ *Keep an objective perspective;*
- ⇨ *Wargaming serves for the presentation and collection of facts not thoughts or stories;*
- ⇨ *Resolute and stringent direction must not lead to appreciating COAs;*
- ⇨ *All results need to be documented;*
- ⇨ *No change to COAs during the course of the Wargaming.*

2.3.2. Wargaming preparation

The preparation for the wargame involves:

- Determining the desired outcomes.
- Deciding on the method and scope.
- Determining participants including subordinate commands, friendly, neutral and opposing players (e.g. intelligence/knowledge staff who developed opposing COAs).
- Organising referees, expert arbitrators and recorders (scribes).
- Preparing the operational situation.
- Acquiring the tools for manual or computer assisted simulation and analysis.
- Preparing a suitable venue.
- Establishing rules.
- Reviewing the Commander's COA Selection Criteria

2.3.3. Initiation

➔ *Determining the appropriate action to wargame is critical.*

AOPG director in coordination with the COMJFAC should decide which appropriate period to wargame and which wargame method to implement (Decisive Conditions, Phases, Segments, etc.). When under time pressure, AOPG director must decide which specific aspect of the COAS should be wargamed. So it is worth deciding for a timeframe or an area, where the success is critical or not granted.

2.3.4. Wargaming turns

The standardised schedule of a wargame can be adapted to the situation. Following this matrix helps, nevertheless, in not losing time on unproductive debates.

The referee sets up the situation and decides which side (blue or red) begins the action.

When beginning with friendly forces actions, AOPG runs the overall process (Enemy reaction and Blue force counter reaction, as depicted in the following matrix).

When departing with the red team, AOPG will run only the Blue reaction. Red counter-reaction will not provide AOPG with relevant results to be recorded as they will be based upon subjective development by the red team.

During the presentation the scribe will note all remarks for later use, subject matter experts will participate as well to give further inputs if required.

2.3.5. Recording results

The recording of the results should drive to highlight:

Advantages and disadvantages of the COAs

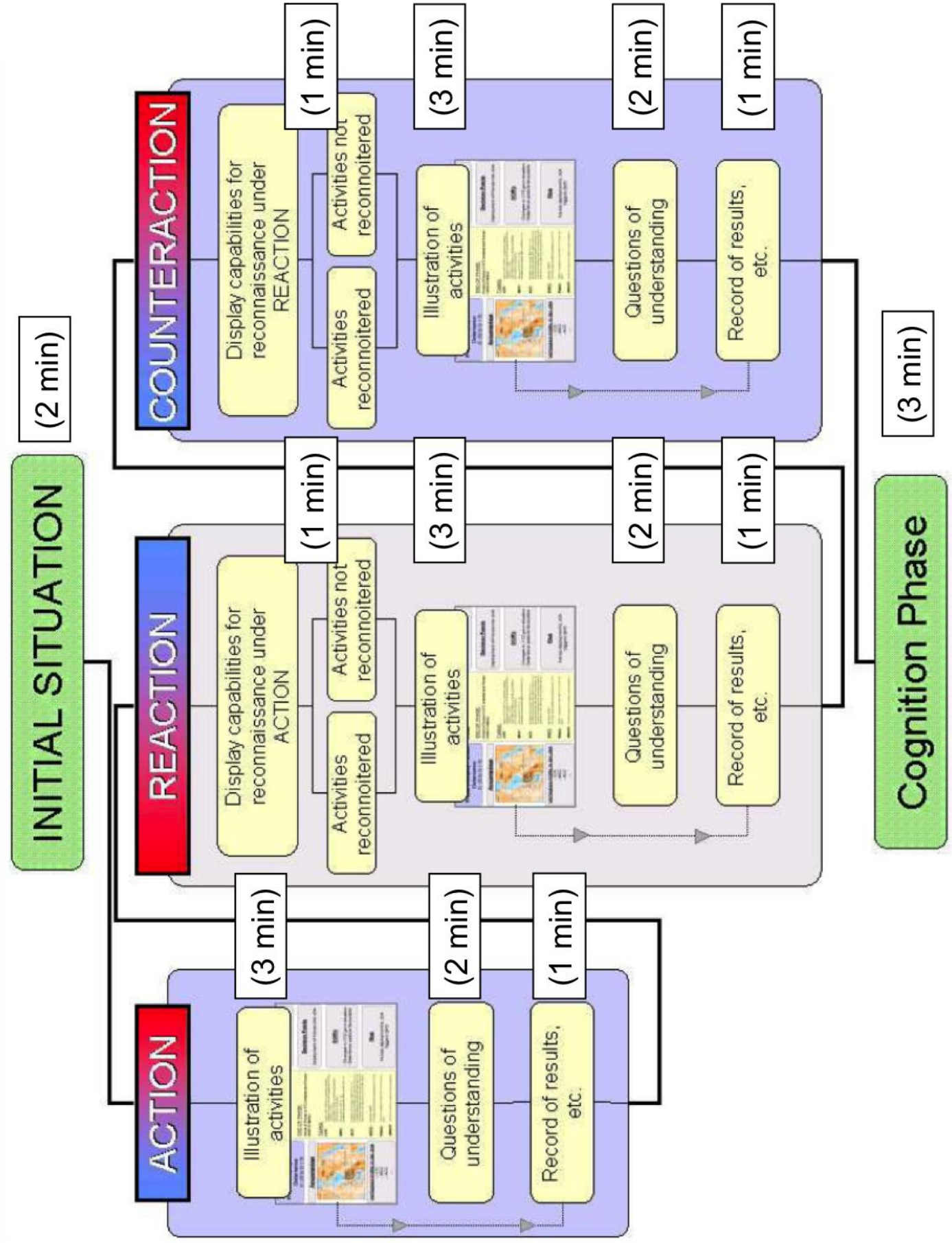
Deficiencies in the COAs that must be corrected

Additional force capability requirements

Risks and opportunities

Decision points and supporting CCIR

With the point out of critical elements by the referee, team leaders should refine their COAs to figure out the lessons learned and the weak points identified during the wargame.


INITIAL SITUATION
(2 min)
ACTION
Illustration of activities
(3 min)
Questions of understanding
(2 min)
Record of results, etc.
(1 min)
REACTION
Display capabilities for reconnaissance under ACTION
Activities reconnoitered
Activities not reconnoitered
(1 min)
Illustration of activities
(3 min)
Questions of understanding
(2 min)
Record of results, etc.
(1 min)
COUNTERACTION
Display capabilities for reconnaissance under REACTION
Activities reconnoitered
Activities not reconnoitered
(1 min)
Illustration of activities
(3 min)
Questions of understanding
(2 min)
Record of results, etc.
(1 min)
Cognition Phase
(3 min)

WARGAMING CHECKLIST

A- Prerequisites.

Own CoAs, enemy CoAs (Most likely and Most dangerous) and period of time, area or Decisive condition to be wargamed.

B- How to proceed

1- The AOPG director must decide which period of time, which area or Decisive condition to wargame in order to assess own CoAs strenghs and weaknesses.

2- The AOPG director will appoint a wargaming team, including a referee

3- Own CoAs leaders must prepare for the wargaming with supporting material like beddown, actions to be performed, achieved DC, ISR collection…

4- Each CoA leaders (blue and red) will designate a team for the wargaming including:

- ✓ a leader, a deputy, a scribe,

5- SMEs of the CoA and Advisors of the AOPG will be part of the wargaming that can be addressed by COA leaders.

6- Referee will remind the wargaming rules and timeline.

7- All teams must keep in mind that recording the results is a critical issue of the wargaming

8- Referee will describe the initial situation with the wargamed period, area or DC.

9- Referee decides which side (team 1) will initiate first turn.

10- Team 1 initiate first turn by describing activities from their COA.

11- Team 2 gets the opportunity to ask questions of understanding on the activities.

12- Both teams record the results

13- Team 2 describes what they can know and what they can't about opponent activities, relying on their scheduled capabilities for reconnaissance.

14- Team 2 describe the reaction to the team 1 activities.

15- Team 1 gest the opportunity to ask questions of understanding on the activities.

16- Both teams record the results

17- If Team 1 is Red team (enemy side), the wargame may stop at this point. Go to item XX of the checklist

There is no interest to play out an enemy counteraction, as it too much subject to interpretation about the enemy possibilities.

18- Team 1 describes what they can know and what they can't about opponent activities, relying on their scheduled capabilities for reconnaissance.

19- Team 1 describes the activities as a counteraction against enemy activities

20- Team 2 gets the opportunity to ask questions of understanding on the activities.

21- Both teams record the results

22- the referee lead the cognition phase

C- Outcome

An appreciation of probable results and outcomes typically follows each game turn and is used to set conditions for the succeeding game turns.

Recording Results. Observations and conclusions drawn from the wargame should be recorded in line with the purpose. Typically, these include:

- ✓ Advantages and disadvantages.
- ✓ Refinements to the COA and correction of deficiencies.
- ✓ Additional force/capability requirements.
- ✓ Synchronisation requirements.
- ✓ Significant risks/opportunities encountered against opposing COAs.
- ✓ Branches and sequels required.
- ✓ Decision points and supporting CCIRs.
- ✓ Amendments to the provisional component missions.
- ✓ Other observations/conclusions.

The results from the wargaming should provide material for CoA comparisons. COA comparisons include:

- ✓ Advantages and Disadvantages
- ✓ Compare Friendly and Opposing COAs
- ✓ Compare COAs against COMJFAC's selection criteria
- ✓ Analyse and Test COAs for Viability
- ✓ COA Risk Evaluation

See check list FOR COA COMPARISON for more details

3. COA COMPARISONS AND COA RISK ANALYSIS

3.1. COA comparisons.

The wargaming helps in comparing the COAs through different processes.

3.1.1. Advantages and disadvantages.

The AOPG highlights and consolidates the advantages and disadvantages found during the initial analysis of COAs as well as those revealed during wargaming. The process of comparing these should seek consistency across the different COAs.

3.1.2. Comparison of Friendly and Opposing COAs

Based on the results of wargaming, the AOPG is able to rate how well each own COA coped with opposing COAs. The expected effectiveness, likely costs and potential risks for each combination should be identified.

and third, by comparing them against the Commander's COAs selection criteria.

Inherent advantages and disadvantages:

Comparing their performance/risks against opposing COAs

3.1.3. COMJFAC's selection criteria

These criteria should reflect what the Commander considers to be most important for mission accomplishment based on Operational level direction.

⇨ ***All COAs should meet these criteria since their development has been guided by the Commander's vision.***

COAs will differ as to how well they satisfy the different criteria. AOPG should rate this difference and, with a given criteria weight provided by the COMJFAC, should be able to objectively identify which COA better responds to the COMJFAC direction and guidance to execute the mission.

Example for Commander's selection criteria:

Weight	Criteria	Impact COA 1	Result	Impact COA 2	Result
4	MISSION ACCOMPLISHMENT	3	12	x	YY
3	FLEXIBILITY	4	12	x	YY
4	POLITICAL ACCEPTANCE	1	4	x	YY
3	RAPIDITY	x	YY	x	YY
2	SUPPORT TO OTHER CCs	x	YY	x	YY
3	SUSTAINABILITY	x	YY	x	YY
4	PROTECTION OF OWN FORCE	x	YY	x	YY
4	RISK TO OWN TROOPS	x	YY	x	YY
	TOTAL	COA 1 =	**XYZ**	COA 2 =	**XYZ**

3.2. COA risk analysis

As the COAs develop, the AOPG should be constantly looking for risks and, if necessary, finding ways to mitigate them. The COA risk evaluation provides the Commander with an appreciation of the risks for each COA against specific aspects of the COA (e.g. mission (including operational objectives), DCs, desired operational effects, etc.), as well as how those risks could be mitigated, including requirements for branches and sequels. Building on the mission analysis risk analysis, the AOPG will evaluate additional risks that have been identified. The figure in 3.2.2 provides a possible way of capturing and evaluating risks.

Operational Level Risk Evaluation			
Source	**Consequence for**	**Severity**	**Probability**
Actions of the opponent(s). Actions of friendly forces. Operational environmental factors.	Overall mission. Line of operation. Decisive conditions. Desired operational effect.	**Extremely high** - could result in failure to accomplish mission. **High** - could result in failure to achieve one or more objectives, or decisive conditions. **Moderate** - could result in failure to meet criteria for success or create operational effect, or exceed time, space, forces/actors limits. **Low** - minimal impact on mission accomplishment.	High. Moderate. Low.
Risk Mitigation Can we neutralise the source, and if so how? Can we reduce our vulnerability to the source of the risk and if so how? Can we limit the consequence and/or severity of the occurrence and if so how? Can we reduce the probability of occurrence and if so how?			
Conclusion **Unacceptable** - risk mitigation cannot reduce risk to an acceptable level. **Conditionally acceptable** - risk can be reduced to an acceptable level by taking actions to: Modify force disposition/posture/composition. Adjust current operations. Prepare branch plan or sequel. **Acceptable** - no risk mitigation actions required.			

Figure 4.12 - Operational Level Risk Evaluation Template

COA COMPARISON CHECKLIST

A- PREREQUISITES

1. Own COAs developed and enemy COAs;
2. Wargaming results;
3. COMJFAC criteria and their weight.
4. CoA risk analysis

B- HOW TO PROCEED

B.1- Compare own COAs (pros and cons).

1. List the obvious advantages and disadvantages of each COA;
2. Integrate pros and cons identified during the wargaming and/or during COA Risk analysis development;
3. Build a matrix to be able to compare those COAs together.

	Advantages	Disadvantages
BLUE COA1		
BLUE COA2		

B.2- Compare Friendly and Opposing COAs.

1. Based on the results of wargaming, the AOPG should rate how well each own COA coped with opposing COAs.
2. Indicate the expected effectiveness, likely costs and potential risks for each combination.

	BLUE COA1	BLUE COA2
Red Most likely COA	Effectiveness: Cost: Risk:	Effectiveness: Cost: Risk:
Red Most dangerous COA	Effectiveness: Cost: Risk:	Effectiveness: Cost: Risk:

B.3- Compare COAs against COMJFAC's selection criteria

➔ AOPG should compare these differences using whatever method the Commander prefers (e.g. narrative, one word descriptors, numerical rating, rank ordering or +/0/-).

When using numerical rating:

1. Build a matrix with in a column the criteria selected by the commander
2. Add a column for the weight (do not put it at first)
3. Add one column per COA
4. For each COA, rate the impact of each criteria from 1 to 5 (different methods exist)
5. Add the weights given by the commander
6. Multiplicate the rate by the weight for each line and each COA
7. Summ the points by column (each COA)
8. The highest result reflect an objective selection of the COAs

B.4- COA Risk Evaluation

As they develop COAs, the AOPG should be constantly looking for risks and, if necessary, finding ways to mitigate them. The COA risk evaluation provides the Commander with an appreciation of the risks for each COA against specific aspects of the COA (e.g. mission (including operational objectives), DCs, desired operational effects, etc.), as well as how those risks could be mitigated, including requirements for branches and sequels. Building on the mission analysis risk analysis, the JOPG will evaluate additional risks that have been identified. The operational level risk evaluation matrix, provides a possible way of capturing and evaluating risks.

TYPICAL COURSE OF ACTIONA DECISION BRIEF (*COA DB*)

1. **Introduction**
2. **Political and SACEUR Direction and Guidance Highlights**
3. **Commander's OPG Highlights**
   - **1**- Higher Direction;
   - **2**- MAB Summary
4. **Mission**
   - **1-** Initial Intent
   - **2-** Operational COGs
   - **3-** Initial Operational Design.
5. **Situation analysis**
6. **Red COAs**
   - **1**- General Description;
   - **2**- Potential Operational Timeline;
   - **3**- Analysis (Advantages and Disadvantages);
   - **4**- Assessment of Opposing COAs.
7. **Blue COAs**
   - **1**- Common Points Applicable to all COAs;
   - **2**- Specifics for each COA;
   - **1-** Aim;
   - **2-** General CONOPS (Sequencing/Phasing Description, map sketches);
   - **3-** CONOPS by Phase;
   - **4-** Start and end conditions, and purpose of the phase;
   - **5-** Sub-sequencing as necessary;
   - **6-** Operational effect;
   - **7-** Operational actions;
   - **8-** Essential capabilities required for the phase, if appropriate;
   - **9-** Possible decision points, and related required CCIR;
   - **10-**Task Organisation;
   - **11-**Ops timeline;
   - **12-**Log. Support Concept (if not common to all COAs);
   - **13-**Mil. Engineering Concept;
   - **14-**C2 Arrangements incl. Areas of Operations (if not a common to all COAs);
   - **15-**Major differences to other COAs.

8. Analysis and Comparison of COAs

1- War Game Results ;

2- Comparison of COAs;

(1) Advantages and Disadvantages;

(2) Friendly COAs to Opposing COAs.;

(3) Against Commander's Selection Criteria;

(4) COA Risk Assessment.

3- Recommended COA;

4- Branch Plan Requirements for Recommended COA.

9. Unresolved Critical Issues

10. Commander Guidance Required

11. Way Ahead

4. OPERATIONAL PLAN (OPLAN) DEVELOPMENT

After the component estimate, some members of the AOPG could be requested to stay for the Phase 4 - Plan development which is divided in two steps:

Phase 4a, the CONOPS development and phase 4b, the OPLAN development.

4.1. PHASE 4a - CONOPS development

Prerequisites

CONOPS development begins following the revision of the Commander's selected COA, operational design and component mission with air objectives. The staffs also need the Commander's guidance, including on required branches and sequels, milestones for the development of the CONOPS and Commander's guidance on coordination with relevant national and international actors.

Process

The revised COA and its operational design, is the basis for the development to the AIR CONOPS. This is especially important for JFAC-HQ personnel not involved so far in the conduct of the air estimate.

Staff work is to focus on describing operational direction, execution, service support, command and signal.

Phase 4a concludes with the submission of the draft Air CONOPS to the COMJTF, CONOPS back brief, and its supporting illustrative statements of requirements

- Operational statements of requirements, including CJSOR,
- Theatre Capabilities Statements of Requirements (TCSOR),
- Manpower SOR (in the form of a request for PE reinforcement or a CE),
- Rules of Engagement request (ROEREQ).

They are essential for the finalization of the operational and the strategic CONOPS. The draft CONOPS also provides the basis for the commencement of the development of the Air OPLAN.

4.2. PHASE 4b - Plan development

The purpose of Phase 4b is to

1- develop the arrangements and further specify the required activities to implement the operational CONOPS

2- to specify the conduct of operations, including the deployment, employment and sustainment of forces.

The CONOPS (description of how the operation will be conducted) is the basis for the construction of the plan. The annexes provide details, including ADP and ACP, when the COMJFAC is vested with the responsibilities as Air Defence Commander and Airspace Control Authority (ACP). The Plan provides the Task Force organisation, the synchronization of Forces and Functions for each phase of the operation, the build-up

and use of Reserve forces. It also contributes to StratCom and Information Strategy and includes cooperation with relevant national and international actors.

4.3. CONOPS & Plan outputs

Drafted Component CONOPS & Plans are submitted for final consideration in Joint CONOPS & Plan focusing on 4 domains of interest we have to look after when planning:

- Coordinating instructions : CCIRs, CRMs, ROEs, targeting, Force Protection, Military Police, Public Affairs and StratCOM requirements, CIMIC, Inter-agency Coordination, Partner Involvement, Operations assessment (MOEs, MOPs), Lessons Learned, Critical timings).
- Service Support concept : Staging and entry into the JOA, Theatre and forward logistic bases, Petroleum, oils, lubricants (POL) supply and distribution, Strategic & theatre infrastructure support and prioritie, Logistic command, control and co-ordination relationships, Reporting procedures
- C2 and CIS Support concept: C2 arrangements, relationships and liaisons, Task Organisation and Command Relationships, Chain of command, delegation and transfer of command authorities, the JOA and Areas Of Operations (AOOs), Liaison and Coordination, Location/co-location of primary HQs based on CIS limitations, phasing of C2 (if COMJFAC deploys).
- Any Operational requirements

4.4. Annexes

A limited number of annexes are specifically mandated for inclusion with the Operational level CONOPS to the Strategic level. Most aspects of the campaign or operation will be developed during Phase 4b and detailed in annexes as follow:

- A- Concept of Operations
- B- Task Organisation (TASKORG) and Command Relationships
- C- Forces and Effects
- D- Intelligence
- E- Rules of Engagement
- J- Force Protection
- P- Electronic Warfare
- R- Logistics
- S- Movements
- T- Environmental Support
- AA- Legal
- GG- Non-NATO Force Procedures
- II- Targeting
- JJ- NATO Crisis Response System (NCRS)
- OO- Operations Assessment
- QQ- Medical
- TT- Public Affairs

5. AIR OPERATIONS DIRECTIVE (AOD)

5.1. Generalities

We are no longer in the planning phase but in phase 5 – Execution.

Before the operation starts, the JTFHQ will issue a Joint Coordination order, followed by the AOD signed and promulgated by the COM JFAC. The AOD is the expression of the COMJFAC's intent and provides direction and guidance to the planning and execution branches of the JFAC HQ. The AOD is the translation of higher-level guidance (JCO) into directives at the air component level for the JFAC HQ and units. That means that any time there is a new JCO, a new AOD will most likely be issued.

The COMJFAC conducts the air plan through periodic AODs, then through the ATO (AOD being the mother document for ATO development).

The AOD outlines the COMJFAC's guidance for the execution of the air plan during a specific phase (means at least one AOD per phase of the operation) such as mission priorities, objectives, apportionment, allocation of forces, RAP production areas, Air defence areas…

5.2. PHASE 4b - Plan development

The AOD covers the current situation (enemy forces, friendly forces) and describes COMJTF guidance (JTF mission, intent, main effort, supporting/supported relationship, JFAC mission).

The chapters developed by the Strategy Division of the JFAC HQ, detail the following:

COMJFAC intent, Scheme of manoeuvre (from the COA DB), air objectives, apportionment by mission types, specific priorities and goals, acceptable level of risk, guidance for TST, CCIRs, C2 organisation.

The Combat Support Division (CSD) of the JFAC HQ is in charge to describe the logistics' support of the air ops.

Finally, in addition to annexes provided in the JCO (JTL, Air PTL, JPDAL, TST matrix), some are developed to describe JFAC resources allocation, daily sorties capability, prioritized objectives by mission type, tasks prioritization.

6. EFFECTS NOMENCLATURE

ADVISE [1]**.** The use of influence to work by, with and through HN security forces.

ADVANCE [2]**.** Promote or bring forward [2]

ASSAULT [3]**.** The climax of an attack; closing with the enemy

ASSESS [4]**.** Pose a judgement after comparing measured performances against a standard

ASSIST [2]**.** Give help to

BLOCK [3]**.** Deny enemy access to a given area, or to prevent his advance in a particular direction

BREACH [5]**.** Break through or secure passage through an enemy defence, obstacle, or fortification

BUILD UP [3] **.** The process of attaining prescribed strength of units and prescribed levels of vehicles, equipment, stores and supplies. Also may be applied to the means of achieving this process

BYPASS [5]**.** Maneuver around an obstacle, position, or enemy force to maintain the momentum of advance

CANALISE [5]**.** Restrict enemy movement to a narrow zone

CAPTURE [5]**.** Gain possession of specified enemy personnel, materiel or information

CLEAR [5]**.** Remove all enemy force and eliminate organized resistance in an assigned area

COERCE [4]**.** To use force or the threat of force or other partially prejudicial means to persuade a party to adopt a certain pattern of behaviour against his wishes [4]

COMPEL [4]**.** To force someone to undertake a desired course of action

CONFIRM [2]**.** Establish more firmly

CONTAIN [3]**.** To stop, hold, or surround the forces of the enemy or to cause the enemy to centre his activity on a given front and to prevent his withdrawing any part of his forces for use elsewhere

CONTROL [5]**.** Maintain physical influence over a specified area to prevent its use by an enemy

CONVINCE [4]**.** To bring to belief, consent or a course of action.

COORDINATE [2]**.** Bring parts into their proper relation

COUNTER ATTACK [5]**.** Attack against an-enemy attacking force

COVER [3]. The action by land, sea or air forces to protect by offence, defence, or threat of either or both

DECEIVE [3]. *(Deception) Those measures deigned to mislead the enemy by manipulation, distortion, or falsification of evidence to induce him to react in a manner prejudicial to his interests

DEFEND [2]**.** Conduct defence of

DEFEAT [5]**.** (To) diminish the effectiveness of the enemy, to the extent that he is either unable to participate in combat or at least cannot fulfil his intention

DEGRADE [4]**.** To reduce effectiveness or efficiency

DELAY [3]**.** Trade space for time by slowing down the enemy's momentum and inflicting maximum damage on the enemy without, in principle, becoming decisively engaged

DENY [3]**.** Refuse entity a thing

DEMONSTRATION [3]**.** An attack or show of force on a front where a decision is not sought, made with the aim of deceiving the enemy

DEMONSTRATE [3]**.** Deceive the enemy by making a show of force without seeking contact .

DEPLOY [3]**.** The positioning of forces into a formation for battle

DESTROY [5]**.** Damage an object or an enemy force so that it is rendered useless to the enemy until reconstituted

DESTABILISE [2]**.** Make not firm and resolute. Make waiver

DETAIN [5]**.** To seize and hold a person under authority of the laws·[5]

DETECT [3]**.** The discovery by any means of the presence of a person, object or phenomenon of potential military significance[3]

DETER[3]**.** The convincing of a potential aggressor that the consequences of coercion or armed conflict would outweigh me potential gains. This requires the maintenance of a credible military capability and strategy with the clear political will to act

DEVELOP [1-2]**.** {Advance friendly force capability and competence}

DISCREDIT [2]**.** Bring disbelief or discredit upon

DISENGAGE [5]**.** Break contact with the enemy

DISLOCATE [6]**.** To dislocate the enemy is to deny him the ability to bring his strength to bear. Its purpose is much wider than disruption and goes beyond the frustration of the enemy's plans. Its purpose is to render the strength of elements of the force irrelevant. It seeks to avoid fighting the enemy on his terms

DISRUPT [5]**.** Break apart an enemy's formation and tempo, interrupt the enemy timetable, cause premature and/or piecemeal commitment of forces ·

DIVERT [3]**.** (Diversion) The act of drawing the attention and forces of an enemy from the point of the principal operation

EDUCATE [2]**.** Give intellectual and moral training

EMPHASISE [2]**.** Bring Into special prominence

EMPOWER [2]**.** Authorise or licence a person or thing to do Something

ENABLE [2]**.** Provide means to make possible

ENCIRCLE [2]**.** Surround or encompass

ENCOURAGE [2]**.** Embolden, advise, promote or assist

ENHANCE [2]**.** Intensify value or attractiveness of

ENVELOP [3]**.** (Envelopment) An offensive manoeuvre in which the main attacking force passes around or over the enemy's principal defensive positions to secure objectives in the enemy's rear

ESCORT [3]**.** Accompany and protect another force or convoy

ESTABLISH [3]**.** An installation, together with its personnel and equipment, organized as an operating entity

EXFILTRATE [5]**.** Removal of personnel or units from areas under hostile control by stealth, deception or clandestine means.

EXPLOIT [3]**.** Take full advantage of success in battle and following up initial gains

EXPOSE [4]**.** To make known or cause to be visible to the public eye

EXTRACT [3]**.** Removal of forces from a hostile or potentially hostile area

FEINT [5]**.** Deceive the enemy by seeking contact but avoiding a decisive engagement

FIND [7]**.** Locate, identify and assess the enemy's intentions

FIX [5]**.** Prevent an enemy from moving any part of his forces from a specified location for a specified period of time

GUARD [3]**.** A security element whose primary task is to protect the main force by fighting to gain time, while also observing and reporting

HARASS [3]**.** Repeated, deliberate and intimidating activity intended to discourage, impede and disrupt

HOLD [3]**.** To maintain possession of a position or area by force

IDENTIFY [3]**.** (preferred term Identification) The process of attaining an accurate characterization of a detected entity by any act or means so that high confidence real time decisions, including weapons engagement, can be made

INDUCE [2]**.** Prevail on, or persuade [someone or something] to bring [something] about

INFILTRATE [5]**.** Move a force into or through areas under enemy control without detection

INFLUENCE [2]**.** Sway, induce or affect

INTERCEPT [2]**.** Seize/catch a thing or person between two places

INTERDICT [5]**.** Keep an enemy force out of range so that it cannot be used effectively against a friendly force

INTEGRATION [8]**.** The process of conducting the synchronised transfer of operationally ready units into the combined joint force

ISOLATE [5]**.** Seal off an enemy force from its sources of support, to deny it freedom of movement, and prevent it from having contact with other enemy forces

LIAISE. (Liaison) Contact or intercommunication maintained between elements of military forces to ensure mutual understanding and unity of purpose and action

LINK UP [7]. A meeting of friendly ground forces which occurs in a variety of circumstances

LOCATE [5]. Determine the location of a specified thing

MAINTAIN. All supply and repair action taken to keep a force in condition to carry out its mission

MANAGE [2]**.** Control/handle

MANIPULATE [4]**.** To manage by dextrous (especially unfair) use of influence

MANOEUVRE [3]**.** Employment of forces on the battlefield through movement in combination with fire, or fire potential, to achieve a position of advantage in respect to the enemy in order to accomplish the mission

MARK [3]**.** To call for fire on a specified location to indicate targets

MASK [2]**.** Conceal from enemy's view[2] .

MENTOR [9]**.** To serve as a teacher and trusted councillor

MISLEAD [4]**.** To create a false perception that leads someone to act in a manner detrimental to mission accomplishment while benefitting accomplishment of friendly objectives

MONITOR [9]**.** Observation designed to actively follow the activities of certain parties or events and to take measures in case parties do not comply

NEUTRALISE [3]**.** To prevent enemy personnel or materiel from interfering with a particular operation [3]

OCCUPY [5]**.** Position a unit in a specified area without enemy opposition

ORGANISE [2]**.** Give orderly structure to

OVERTHROW [2]**.** Subvert to defeat

PARTNER [10]**.** Attach units at various levels to leverage the strength of both NATO and HN Security Forces

PENETRATE [3]. (Penetration) A form of offensive which seeks to brake the enemy's defence and disrupt the defensive system

PERMIT [2]. Give permission

PREVENT [2]**.** Hinder or Stop

PROMOTE [4]. To contribute to the progress or growth of; further

PROTECT [4]. To cover or shield from exposure, damage of destruction

PURSUE [3]**.** (Pursuit) An offensive operation designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it

REASSURE [2]**.** Restore confidence or dispel fear

RECOGNISE [3]**.** (Recognition) The determination of the nature of a detected person, object or phenomenon, and possibly its class or type. This may include the determination of an individual within a particular class or type

RECONCILE [2]**.** Harmonise, make compatible

RECONSTITUTE [2]**.** Piece together elements into an intelligible table

RECOVER [5]**.** Extract a friendly force element or materiel from a location not under friendly control, with or without force

REINFORCE [2]**.** Strengthen with new material, support, force

RELIEVE [2]**.** Bring Relief to

RESCUE [2]**.** Forcibly recover/deliver from attack

RESTORE [2]**.** Renew/give back

RETAIN [5]**.** Keep possession of a terrain feature to ensure it is free of enemy occupation or use

RETIRE [3]**.** (Retirement) An operation in which a force out of contact moves away from the enemy

SCOUT [2]**.** Gaining information about an enemy or surroundings through reconnoitre

SCREEN [3]**.** A security element whose primary task is to observe, identify and report information, and which only fights in self-protection

SEARCH [9]**.** Explore specific places or areas in order to find what one is looking for

SECURE [3]**.** In an operational context, to gain possession of a position or terrain feature, with or without force, and to make such disposition as will prevent, as far as possible, its destruction or loss by enemy action

SECURITY [6]**.** Security is a condition that gives a commander sufficient freedom of action to fulfil his aim

SEIZE [5]**.** Clear a designated area and obtain control of it

SHAPE [4]**.** 1. To determine or direct the course of events -

2. To modify behaviour by rewarding changes that lead to a desired response

3. To cause to conform to a particular form or path

STABILISE [9]**.** To reduce and manage underlying and obvious tensions that might lead or have already lead to violence and to breakdown in law and order, while at the same time efforts are made to support a successful long term development

STRIKE [3]**.** Inflict damage on, seize or destroy an objective

SUPPORT [3]**.** The action of a force, or portion thereof, which aids, protects, complements, or sustains any other force

SUPPRESS [5]**.** Temporarily degrade an enemy capability to enable a friendly action

SUSTAIN [3]**.** The ability of a force to maintain the necessary level of combat power for the duration required to achieve its objectives

TARGET [3]**.** (n.) The object of a particular action, for example a geographic area, a complex, an installation, a force, equipment, an individual, a group or system, planed for capture, exploitation, neutralisation or destruction by military forces

TRACK [3]**.** To display or record the successive positions of a moving object

TURN [5]**.** Force an enemy from one direction of advance to another [5]

UNDERMINE [2]**.** Injure a person/entity by secret means

UNDERSTAND. Grasp mentally; perceive the significance of or explanation; know how to deal with[2]

WARN [2]**.** Give notice to, put on guard pf danger or unknown present circumstance[2].

WITHDRAW [5]**.** Disengage from the enemy and move in a direction away from the enemy[5]

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7. GLOSSARY OF ABBREVIATIONS - PLANNING

This Glossary contains abbreviations and acronyms used in planning activities. It is not exhaustive; more comprehensive lists of abbreviations with explanation are contained in COPD, **AAP-15** & **AAP-6**.

Abbreviation	Definition
A2/AD	Anti Access/ Area Denaial
ACC	Air Component Command. (Old acronym for JFAC HQ)
ACTORD	Activation Order
ADAMS	Allied Deployment and Movement System
AJP	Allied Joint Publication
AMCC	Allied Movement Coordination Centre
AO	Air Objective
AOI	Area of Interest
AOO	Area of Operation
AOPG	Air Operations Planning Group
APOD	Airport of Debarkation
ASAP	As soon as possible
BP	Branch Plan
BPT	Be prepared to
CAT	Cross-functional Action Team
CAT	Campaign Assessment Tool (TOPFAS)
CCs	Component Commands
CC	Critical Capability
CCD	CIS and Cyber Defence
CCIR	Commander's Critical Information Requirements

Abbreviation	Definition
CE	Crisis Establishment
CG	Command Group
CIMIC	Civil-Military Cooperation
CIS	Communication & Information Systems
CJSOR	Combined Joint Statement of Requirement
CLE	CyOC Liaison Element
CMI	Civil-Military Interaction
CNMA	Complementary Non-Military Actions
CoA	Course of Action
CoG	Centre of Gravity
COM	Commander
CONOPS	Concept of Operation
CONPLAN	Contingency Plan
COPD	Comprehensive Operations Planning Directive
CUoE	Comprehensive Understanding of the Operational Environment
CR	Critical Requirement
CUoE	Comprehensive Understanding of the Environment
CRM	Crisis Response Measures
CRO	Crisis Response Operation

Abbreviation	Definition
CV	Critical Vulnerabilities
CyOC	Cyber Operations Centre
D&G	Direction and Guidance
(COA) DB	(COA) Decision Briefing
DC	Decisive Condition
DP	Decision Point
DPRE	Displaced Persons and Refugees
EEFI	Essential Elements of Friendly Information
FACCES	Feasibility, Acceptability, Completeness, Compliance, Exclusivity and Suitability
FFIR	Friendly Forces Information Requirement (part of CCIR)
FOC	Full Operational Capability
FOF	Follow-on Forces
FOM	Freedom of Movement
FPG	Functional Planning Guide
GENAD	Gender Advisor
GO	Governmental Organisation
GOV	Government
HA	Humanitarian Assistance/Aid
HN	Host Nation
HVA/A	High Value Asset / Area (TBMD)
HVT	High Value Target
I&W	Indications and Warnings
IAMD	Integrated Air & Missile Defence

Abbreviation	Definition
IAW	In accordance with
IED	Improvised Explosive Device
IER	Information Exchange Requirements
IMS	International Military Staff
INTEL	Intelligence
IO	International Organisation
IOC	Initial Operational Capability
IoP	Instruments of Power
IoT	In order To
IS	International Staff (NATO structure)
JAOP	Joint Air Operations Plan
JCO	Joint Coordination Order
JCOP	Joint Common Operational Picture
JIPOE	Joint Intelligence Preparation of the Operational Environment
JFAC	Joint Force Air Component
JFAC HQ	JFAC Head Quarter
COMJTF	Joint Force Command
JHQ	Joint Headquarters
JLSG	Joint Logistics Support Group
JOA	Joint Operations Area
JOPG	Joint Operations Planning Group
JPTL	Joint Prioritised Target List

Abbreviation	Definition
JPCAL	Joint Prioritised Critical Assets List
JPDAL	Joint Prioritised Defended Assets List
JTF	Joint Task Force
LCC	Land Component Command
LEGAD	Legal Advisor
LLoC	Land Lines of Communication
LO	Liaison Officer
LOAC	Law of Armed Conflicts
LoCs	Lines of Communication
LOGFAS	Logistic Functional Area Services
LOO/ LoO	Line(s) of Operation
M&T	Movements and Transport
MAB	Mission Analysis Briefing
MC	Military Committee
MCC	Maritime Component Command
MEDAD	Medical Advisor
MILENG	Military Engineering
MJO	Major Joint Operation
MOE	Measures of Effectiveness
MOO	Military Operational Objective
MRO	Military Response Option
MSO	Military Strategic Objective
NA5CRO	Non-Article 5 Crisis Response Operation

Abbreviation	Definition
NAC	North Atlantic Council
NCIA	NATO Communication and Information Agency
NCRP	NATO Crisis Response Process (Political and mil. Strategic level)
NCRS	NATO Crisis Response System
NCS	NATO Command Structure (ACT+ACO (Air: AIRCOM, DACCC, CAOCs)
NEO	Non-Combatant Evacuation Operation
NFS	NATO Force Structure (Nations)
NGO	Non-Governmental Organisation
NID	NAC Initiating Directive
NRF	NATO Response Force
NTM	Notice to Move
OE	Operational Effect
OLRT	Operations Liaison and Reconnaissance Team
OMLT	Operations Mentoring and Liaison Team
OPCON	Operational Control
OPD	Operational Planning Directive
OPFOR	Opposing Forces
OPG	Operational Planning Guidance
OPGs	Operations Planning Groups

Abbreviation	Definition
OPLAN	Operation Plan
OPP	Operations Planning Process
OPSA	Operations Assessments
OPT	Operations Planning Tool (TOPFAS)
PCS	Preconditions for Success
PE	Peacetime Establishment
PIR	Priority Intelligence Requirement (Part of CCIR)
PME	Political Military Estimate
PMESII	Political, Military, Environment, Social, Infrastructure, Inform.
POD	Port(s) of Debarkation
PoP	Points of Presence (CIS)
POL	Petrol, Oils and Lubricants
POLAD	Political Advisor
PTL	Prioritised Target List
PVO	Private Volunteer Organisation
RDG	Response Direction Group
RFI	Request for Information
RM	Risk Management
RMP	Recognised Maritime Picture
ROE	Rules of Engagement
ROEREQ	ROE REQuest
RSOM (I)	Reception, Staging, Onward Movement (Integration)

Abbreviation	Definition
SA	Situational Awareness
SACEUR	Supreme Allied Commander Europe
SASE	Safe and Secure Environment
SDP	Standing Defence Plan
SF	Security Forces
SHAPE	Supreme Headquarters Allied Powers Europe
SIGINT	Signal Intelligence
SLOC	Sea Lines of Operation
SME	Special Matter Expert
SOCC	Special Operations Component Command
SOF	Special Operations Forces
SOFA	Statement of Forces Agreement
SPD	Strategic Planning Directive
SPOD	Sea Port of Debarkation
SQN	Squadron
SSA	SACEUR's Strategic Assessment
STRATCOM	Strategic Communication
SUPPLAN	Supporting Plan
SWOT	Strengths, Weaknesses, Opportunities, Threats
TA	Technical Agreement / Arrangement
TASKORG	Task Organisation
TCN	Troop Contributing Nations
TNL	Target Nomination List

Abbreviation	Definition
TOA	Transfer of Authority
TOO	Theatre of Operations
TOPFAS	Tools for Operations Planning Functional Area Services

Abbreviation	Definition
UNSCR	United Nations Security Council Resolution
VJTF	Very high readiness Joint Task force
WMD	Weapons of Mass Destruction

8. GLOSSARY OF ABBREVIATIONS - AIR OPERATIONS

This Glossary contains abbreviations and acronyms used in Air operations. It is not exhaustive; more comprehensive lists of abbreviations with explanation are contained in **AAP-15** & **AAP-6**.

Abbreviation	Definition
AAR	Air to Air Refuelling
ABN	Airborne
ACO	Airspace Control Order
ACM	Airspace Control Measures
ACA	Airspace Control Authority
ACP	Airspace Control Plan
AD	Air Defence
ADC	Air Defence Commander
ADP	Air Defence Plan
AEW	Airborne Early Warning
AFB	Air Force Base
AI	Air Interdiction
AIR C2	Air Command & Control
AIR SUP	Air Superiority
AM	Aerial Mining
AMC	Air Maritime Coordination
AMCP	Air Maritime Coordination Procedures
AOD	Air Operations Directive
AOI	Area of Interest
APCLO	Air Power Contribution to Counter Land Operation
APOD	Airport of Debarkation
ASC	Airspace Control
ASUW	Anti-Surface Warfare
ASW	Anti-Submarine Warfare

Abbreviation	Definition
ATO	Air Tasking Order
AWX	All Weather fighter
BTN	Battalion
BVR	Beyond Visual Range
CAP	Combat Air Patrol
CAS	Close Air Support
CBRN	Chemical, Biological, Radiological and Nuclear
CIVCAS	Civilian Casualties
COMJFAC	Commander of the JFAC
COMJTF	Commander of the Joint Task Force
COMAO	Composite Air Operations
COP	Common Operational Picture
CRC	Control and Reporting Centre
CSAR	Combat, Search and Rescue
C4I	Command, Control, Communication, Computer and Intelligence
DCA	Defensive Counter Air
DOB	Deployed Operating Base
EASA	European Aviation Safety Agency
EW	Electronic Warfare
FIR	Flight Information Region

Abbreviation	Definition
FOB	Forward Operating Base
FOC	Full Operational Capability
FRAGO	Fragmented Order
FTR	Fighter
GAT	Guidance, Apportionment and Targeting
GBAD	Ground Based Air Defence
GCA	Ground Controlled Approach
GCI	Ground Controlled Interception
HVAA	High Value Air Asset
IADS	Integrated Air Defence System
IFR	Instrument Flight rules
ISR	Intelligence, Surveillance, Reconnaissance
MC	Mission Commander

Abbreviation	Definition
MOA	Missile Operating Area
MPA	Maritime Patrol Aircraft
OCA	Offensive Counter Air
PR	Personal Recovery
QRA	Quick Reaction Alert
RECCE	Reconnaissance
RS	Readiness Status
SAM	Surface to Air Missile
SAR	Search and Rescue
SATCOM	Satellite Communications
SBAD	Surface Based Air Defence
SEAD	Suppression of Enemy Air Defence
TAT	Tactical Air Transport
TBMD	Tactical Ballistic Missile Defence
TST	Time Sensitive Targeting
VFR	Visual Flight Rules

JFAC e FPG

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