Virtual Workshop on the implementation of an effective Civil – Military Cooperation

ICAO Civil Military Cooperation Manual - Doc 10088 -

Sessions 4

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Presentation Outline

- Military aircraft operations
- Identifying States' requirements
- Structure, processes and functions
- Legal and regulatory frameworks to develop structures, processes and procedures
- High-level civil-military aviation cooperation policy board (CMAB) and responsibilities
- Establishment of a Committee for Airspace Organization and Management (CAOM)

MILITARY AIRCRAFT OPERATIONS

- State aircraft usually conduct three types of missions: contingency/crisis operations, training/exercises or routine/steady state flights.
- **Contingency/crisis** operations wherein aircraft are engaged against assessed threats (i.e. suspected unlawful interference, sinking ship/aircraft, intruder alerts, pollution, etc.).

❑ In such cases, the appropriate State authority (i.e. military, police, civil protection, transport, coast guard, etc.) expects the deployed assets to achieve a defined objective, while abiding by specific procedures.

❑ During an operation, aircraft may request priority to perform their mission, despite its impact on civil air traffic capacity and efficiency.

❑ military aircraft are likely to also utilize non-civil separation minima in the conduct of the operation.

MILITARY AIRCRAFT OPERATIONS

- For security and defence operations, the gradation of the threat may require different levels of ATS handling.
- Before activating an operation, an alert, early notification and/or information to the appropriate ATS authority and/or ATS unit should be provided where possible.
- This notice may vary according to the type of threat and the operational procedures of the State in question

MILITARY AIRCRAFT OPERATIONS

- The objective of a training mission is to operate the flight as if it was a real operation.
- For military units participating in a training mission, the only difference between a training mission and a real operation would be the absence of a threat.
- Military training flights form the bulk of military daily operational schedules. Flight training may take various forms, including (but not limited to):
  a) training flight;
  b) tactical flight;
  c) large-scale military exercise;
  d) alert training; and
  e) test flights.

MILITARY AIRCRAFT OPERATIONS

- Military forces must perform training missions and conduct exercises to remain operationally current and to preserve their readiness.
- An exercise is a situation where varying assets execute different tasks to react to a scenario and attain one or more objective(s).
- Exercises will use scenarios which are as close as possible to real operations.
- Frequently, exercises are used to assess the capabilities of a unit, State, or a group of States to meet operational expectations or a readiness status.
- Sometimes, an exercise may evolve mimicking the lack of predictability that would be associated with a real operation.

MILITARY AIRCRAFT OPERATIONS

- Large-scale military exercises require access to large volumes of airspace and require appropriate planning and coordination to enable the timely reservation, in case of application of flexible use of airspace (FUA), and promulgation of temporary airspace restriction or reservation for the activity.
- When such exercises require segregation, airspace usage should be closely monitored to ensure airspace is released for any other use as soon as possible.
- Military air exercises should be carried out in accordance with letters of agreement (LOAs), or other appropriate and effective coordination arrangements, detailing comprehensive coordination and de-confliction of specific military activities in the identified airspace.

MILITARY AIRCRAFT OPERATIONS

- Unless special arrangements have been made with the appropriate ATS authority, operational ATS units should not be subjected to no-notice military training exercises.
- Military exercises or training flights should be coordinated in advance with the appropriate ATS units when they could affect civil aircraft operations.
- Letters of agreement are an excellent means to contain notification and coordination procedures that ensure ATS units are prepared to handle military aircraft engaged in these types of training missions.

State Requirements for Airspace Not Necessarily Aviation Related

- States may require access to airspace for specific operations;
- these operations are often not compatible with any other aviation activities.
- Non-aviation related operations can include, but is not limited to, surface/naval weapons firing, research, development and exercising of non-kinetic weaponry, jamming, weapons storage, ballistic launch and space re-entry activities.
- These activities will normally require the use of segregated airspace in order to ensure the safety of non- participating aircraft within the vicinity of these events.

PLANNING PROCESS

- Planning of military training flights is different from that of civil air operations.
- Military airspace scheduling requirements (dimensions and timings) may not be known until nearer to the operation date.
- Major exercises are usually planned months in advance, the specific airspace requirements may only be determined in the last few weeks or days.
- Civil and military airspace planners should continuously update their plans for restricted or reserved airspace and aim to finalize the dimension of the required airspace at an agreed upon time prior to the commencement of the exercise.
- The agreed timing should take into account the administrative and processing time required for the timely publication of the relevant information, ensuring adequate notice for other stakeholders and allowing the ATS authority to properly brief the ATS operational staff.

PLANNING PROCESS

- planning and execution of training activity is based on aircraft and pilot availability.
- On the day of operation, actual airspace needs will evolve alongside aircraft readiness and meteorological conditions
- Unavailability of aircraft or unsuitable weather may require rescheduling flights and the associated airspace
- The aim of a training flight is to qualify and maintain the pilot's proficiency and/or familiarity with tactical procedures
- possible rescheduled and additional activities for the completion of the training syllabus is an important aspect of planning

PLANNING PROCESS

- civil ATS units plan system capacity based on expected traffic,
- military planners should ensure that the appropriate ATS units are advised whenever the magnitude of a training activity is expected to change significantly.
- It’s good practice to agree to a “cut-off” time to establish a time limit on any request to modify the airspace reservations or restrictions in support of training exercises
- Where robust coordination and cooperation processes are in place, the cut-off time can be established nearer to the start time
- In consideration of unplanned changes due to adverse weather or operational challenges, the process for the flexible use of airspace would allow for last-minute changes to airspace requirements to be better accommodated.

PLANNING PROCESS

- During more complex or large-scale exercises, the air component may only be a supporting element to the main ground or naval forces.
- For such cases, considering the intertwined roles, it is a very complex endeavour to predict the exact airspace dimension required to fulfil these activities, due to the many moving pieces and fluid nature of such activities.
- Changes to scheduled activities should be expected, and planned for.
- State aviation authorities may be reluctant to limit the flexibility afforded to national security flights, or to limit training opportunities, readiness capability, realism of exercise and the assessment of operations, for the fear of being unable to meet the security objectives set out by the State.
- The guidelines provided in Doc 10088 for both civil and military stakeholders should aid in finding optimal solutions while preserving national security.

PLANNING PROCESS

- Where the airspace planning process calls for the safeguarding of sensitive information relating to national interests,
- The State should make provisions to ensure that representatives of the civil ATS authority are appropriately cleared and authorized to receive sensitive information.
- Civil ATS units require sufficiently advanced notice and details to be prepared to support military training or operational objectives while developing plans to mitigate impacts to civil aviation.

National security and defence objectives

- Each State defines its own national security and defence objectives which are then used to develop its security, defence, organizational and operational requirements.
- The airspace requirement and possible priorities afforded to state aircraft come as a direct consequence of these objectives.
- Such requirements also guide each State department and allows them to define their specific needs in terms of equipment, budget, personnel, and training, etc.
- When defined at the highest level of the State, the underlying authority supporting these requirements will be more clearly recognized by different departments within its government.
- The importance of defence and security forces vary from State to State and will determine the number of air assets devoted to each respective airspace requirement.

National security and defence objectives

State aviation airspace requirements are developed for two main considerations:

a) building and maintaining the readiness of State aviation capabilities; and

b) undertaking actual operations.

State authorities should consider the impact on civil aircraft operations and other airspace users when establishing requirements.

Priorities: In order **to satisfy national security and defence objectives** and associated airspace requirements, **States may need to define their priorities for airspace allocation.**

These priorities can help both civil and state aircraft operators undertake their operations both in terms of planning and execution when needed, they should therefore be clearly defined and communicated to all stakeholders.

STRUCTURES AND IMPLEMENTATION

- To achieve the intended benefits from civil and military cooperation and coordination,
- States should establish formal civil-military cooperation and coordination structures and processes.
- identifying the needs of the various stakeholders and the objectives to be achieved.
- Civil and military stakeholders should assess their operational requirements to holistically determine the needs of the whole aviation community and the expected benefits from the coordination and cooperation processes
- link the concept of operation for civil-military cooperation, coordination, and airspace organization and management.

STRUCTURES AND IMPLEMENTATION

Factors to be considered:

a) airspace structure and complexity;
b) efficiency of the airspace usage;
c) air navigation system performance issues;
d) types of civil and military air activities;
e) location of military training areas;
f) airspace and/or aerodrome capacity constrains;
g) location of military and civil aerodromes;
h) weather;
i) training requirements of the military;
j) access availability for both stakeholders;

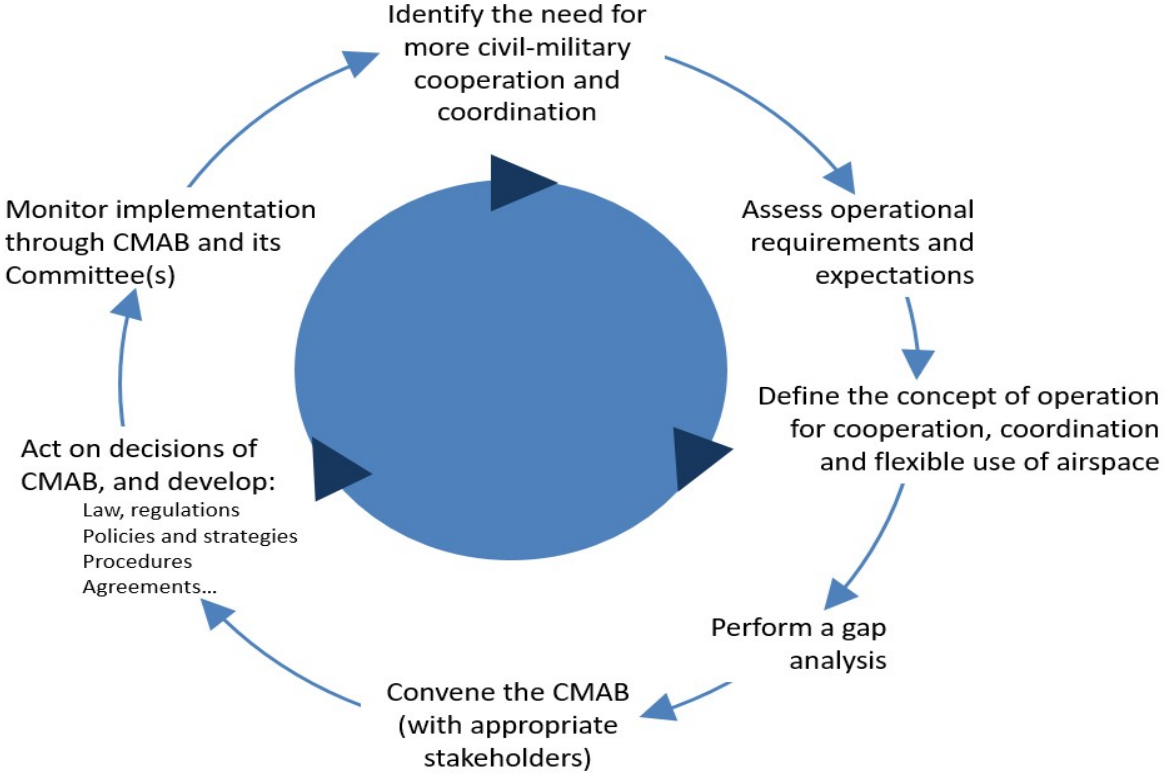
STRUCTURES AND IMPLEMENTATION

Factors to be considered:

a) air traffic flow management (ATFM) requirements;
b) pre-existing coordination mechanisms;
c) level of interoperability between civil and military systems;
d) airspace security considerations;
e) traffic flows and volume;
f) existing regulations (national, supranational, etc.);
g) existing CNS infrastructure; and
h) existing safety issues between civil and military.

Once the requirements are clear, stakeholders should perform a gap analysis against the existing baseline in terms of structures, cooperation and coordination mechanisms, airspace organization, management and policies, and thus determine the implementation requirements. Compare what is **available to what is needed**; and more specifically, **what procedures are used to address those needed**.

An example of implementation and continuous improvement cycle



legal and regulatory frameworks for structures, processes, procedures

a) formalize the high-level commitment of relevant stakeholders and authorities through official terms of reference, specifying the structure and responsibilities of a joint civil-military decision making body

b) develop a framework for a collaborative national airspace planning policy which considers the needs of all airspace users in supporting national economic, security, defence and law enforcement requirements;

c) develop framework agreements, and/or LOAs between civil and military authorities as necessary;

d) review the national legal framework to identify the elements of law or regulation to be amended as required to enable the implementation of cooperation, coordination and airspace management processes; and

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State airspace policy

- Note.— A State airspace policy is a key document that details the different cooperation and coordination processes and interactions applicable in the State, the responsibilities of different actors and processes, as well as the regulatory framework and priorities.

STRUCTURES AND IMPLEMENTATION

- Formalizing the high-level commitment and cooperation structures of civil-military stakeholders may take a different form in each State: Joint declarations, decrees, acts, laws or regulations are a few examples.
- This formal commitment indicates the intent of the highest civil and military authorities of the State regarding civil-military cooperation and coordination.
- This intent should be expressed through the establishment of high-level polices, strategies, and formal supporting structures which empower all civil-military stakeholders (personnel, regulators, ANSPs, ATS unit supervisors, appropriate military units, etc.) to work collaboratively and effectively for the common national interest and benefits.

Civil-Military Aviation Cooperation Policy Board (CMAB)

- crucial that States create a joint civil-military decision-making body to oversee and direct the activities required to implement, maintain and constantly improve civil-military cooperation
- CMAB would be composed of appropriate high-level representatives from both civil and military aviation authorities, as well as others deemed necessary, and would have the authority to plan and allocate airspace, determine the provision of air navigation services and oversee the operations of military aviation authorities.
- CMAB would be responsible for ensuring that civil-military cooperation policies are facilitated and implemented at all levels of the respective authorities.
- CMAB should monitor and coordinate civil and military aviation activities, provide policy direction, allocate resources, and ensure the State's high-level aviation policies and strategies are implemented.

Civil-Military Aviation Cooperation Policy Board (CMAB)

- To achieve the multitude of tasks within its mandate, a CMAB establish committees to study issues related to aviation, develop recommended courses of action, discuss and agree on policy and strategic considerations and present these recommendations and considerations to the CMAB.
- CMAB should meet regularly to review the work of its committees and provide further direction as required
- regularly scheduled meetings and poised to respond to significant events affecting civil or military aviation-related activities
- At minimum, the CMAB should consider the establishment of a Committee for Airspace Organization and Management (CAOM)
- establishment of other committees such as operations, CNS/interoperability and legal, should be based on the State's requirements

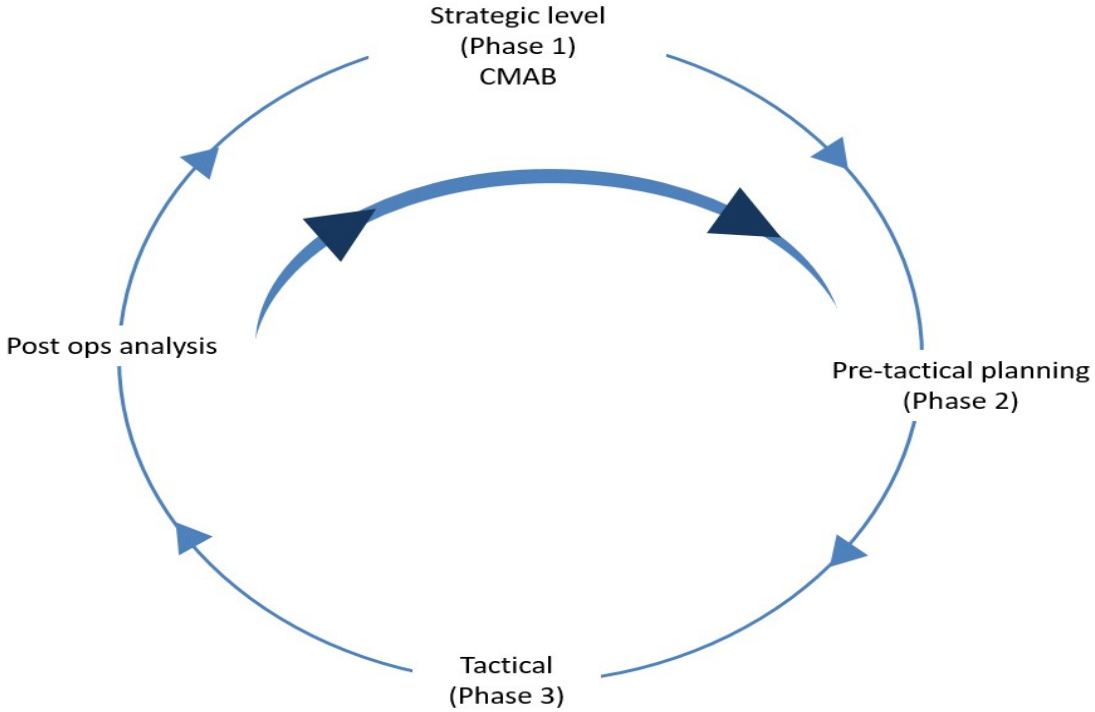
Civil-Military Aviation Cooperation Policy Board (CMAB)

- A CMAB should represent all relevant stakeholders as members or observers.
- Considering the strategic, regulatory and airspace policy responsibilities envisioned for a CMAB, the structure may include the Director General of the Civil Aviation Authority and the equivalent military authority as key members of the body, potentially co-chairing the board.
- The military authority should appoint a senior representative with the appropriate authority with respect to military airspace management, military airspace regulation, and who is accountable for air operation of all branches of the military services, and possibly other State aviation actors.
- civil and military technical expertise should be made available through the participation of appropriate stakeholders

Civil-Military Aviation Cooperation Policy Board (CMAB)

- CMAB should provide a continuous role in monitoring the application of civil-military cooperation, coordination, airspace policy and the performance of the airspace management structures.
- CMAB, and its committees, should monitor implementation and take corrective actions, as necessary, to address performance gaps and account for changing requirements, as well as post-operation analysis, amend the structure, processes or procedures to address the mutually agreed objectives.

Civil-Military Aviation Cooperation Policy Board (CMAB)



Civil-Military Aviation Cooperation Policy Board (CMAB)

CMAB should have the following responsibilities:

a) review and update its terms of reference for effective governance and maintain its supervisory role in implementing civil-military cooperation and coordination across the State;

b) develop a national civil-military policy and strategic implementation plans to foster civil-military collaboration, cooperation and coordination in line with the State's high-level policies and strategies;

c) establish the necessary committees to implement the high level civil-military policies and strategies;

d) recommend necessary legislative amendments to the relevant authorities to ensure that national legal and regulatory framework supports the high-level policy and strategy for civil-military cooperation in aviation;

Civil-Military Aviation Cooperation Policy Board (CMAB)

e) establish a Committee for Airspace Organisation & Management (CAOM) with associated procedures allowing for the safe, equitable and effective management of national airspace in accordance with agreed policies supported by adequate civil-military cooperation and coordination facilities;

f) establish the necessary strategies and policies to enable the development of appropriate operational procedures and LoA, to enable safe and efficient operations;

g) develop communication, negotiation and priority rules and procedures for civil-military cooperation and coordination;

h) task the appropriate ATS authorities and the appropriate military units to develop the necessary civil-military cooperation and coordination procedures;

i) establish a system and process for the review of airspace organization and management to meet the changing needs of the various stakeholders that foster joint airspace planning activities;

Civil-Military Aviation Cooperation Policy Board (CMAB)

- establish and monitor through the CAOM, the implementation of the procedures for airspace reservation or activities which require restriction, to increase predictability and timely access to restricted or reserved airspace whenever possible and maximize benefits and flexibility for all users;
- promote collaborative airspace planning and the harmonization of procedures with neighbouring States;
- enhance interoperability between civil and military ground systems and military aircraft to support the civil-military cooperation and coordination functions;
- establish processes to ensure that safety risk assessments are conducted where appropriate;
- create a consultative process based on consensus to achieve the goals set forth in the high-level airspace policy;
- identify and facilitate the implementation of best practices as standardized procedures;

Civil-Military Aviation Cooperation Policy Board (CMAB)

- ensure that the airspace change processes and procedures developed are compatible with appropriate civil and military aviation safety procedures;
- delegate the approval authority to the appropriate committee as deemed necessary;
- request the appropriate committee to report back on implementation statuses and compliance to the procedures and process;
- supervise and review the work of the committees; and
- monitor and analyse compliance to the established procedures and processes, to further improve civil- military cooperation and coordination.

Laws and Regulations

- Since laws and regulations are often pre-requisites to enforce new concepts, responsibilities or procedures, a Legal Committee (if established by the CMAB) could perform a gap analysis to identify the necessary changes for a future structure enhancing cooperation, coordination and airspace management.
- It should leverage the earlier gap analysis, and amend legislation, regulations or any other form of legal instrument to meet the requirements of civil- military cooperation and coordination, including implementation of FUA.

Improving tactical civil-military coordination

Stakeholders for tactical coordination:

a) all civil ATS units: the different sectors and the respective supervisors;
b) all appropriate military units: military units providing ATS, combat control centres, firing ranges, and the respective supervisors;
c) the airspace management cell (AMC), if implemented;
d) the regional or sub-regional ATFM centre; and
e) any stakeholder directly involved in the daily operation, including any authorities invested of tactical decision-making responsibilities, such as on-duty officers, officers having a delegated authority for the day-to-day flying activities or officer in charge, etc.

Improving tactical civil-military coordination

- coordination processes between civil and military units be reviewed regularly
- direct coordination between operational supervisors, and air traffic controllers, of civil ATS units and the military units enhance safety, supports better deployment of resources during emergencies or contingencies; allows for the timely resolution of specific traffic situations when military activities are conducted in proximity of civil traffic.
- coordination and operational procedures be agreed among stakeholders
- stakeholder list, contact information and coordination procedures should be formalized into an LoA whenever possible.
- In the interest of national security and to ensure the safety of civil aircraft, States may establish secure communications interoperability between specified military units and civil ATS units.

Effective civil-military cooperation and coordination Best Practices

a) military participation at relevant civil ATM, CNS and safety meetings to enhance strategic liaison and facilitate holistic planning;

b) the integration of civil and military CNS/ATM systems, including the joint procurement and sharing of ATS surveillance data, where possible;

c) the joint provision of civil-military navigation aids;

d) joint and common training conducted between civil ATS units and military units providing ATS in areas of common interest;

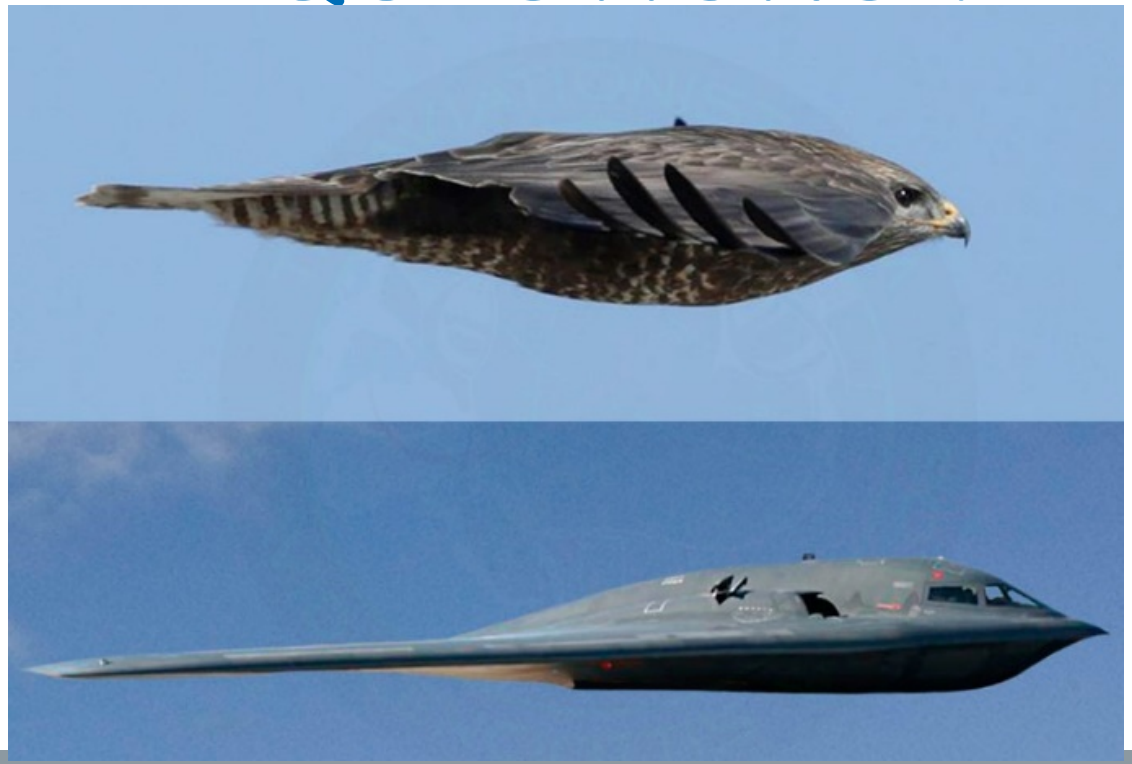
Effective civil-military cooperation and coordination Best Practices

e) common rules, procedures and training programmes as far as practical;

f) legal agreements and specific provisions established between stakeholders within State and/or with other States;

g) participation of military aviation authorities in ICAO global and regional meetings through inclusion in State delegation.

- **QUESTIONS ?**



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