

Civil Military Cooperation &

FUA implementation in India

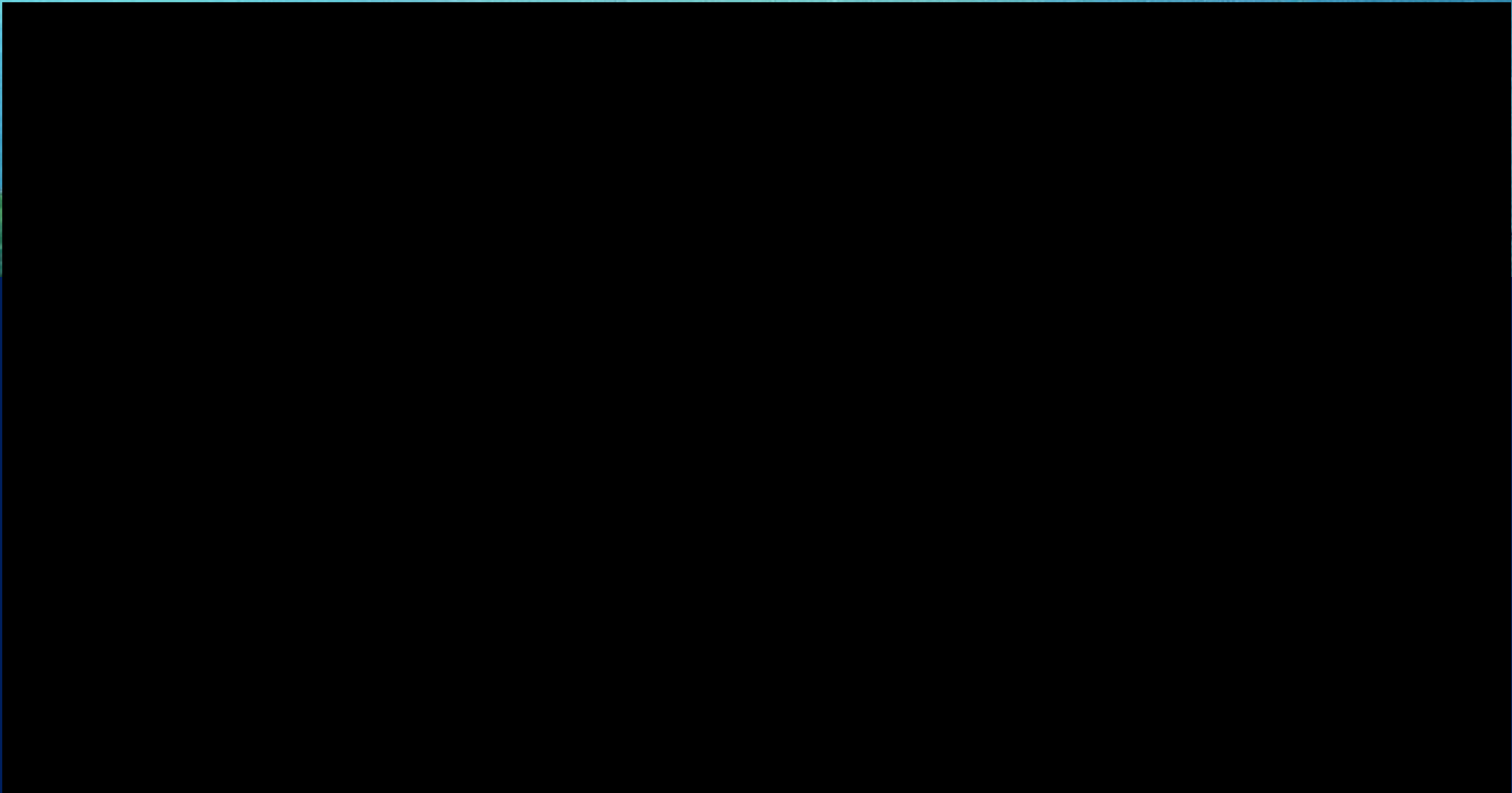
- the Indian ANSP perspective



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.....whose airspace is it anyway?



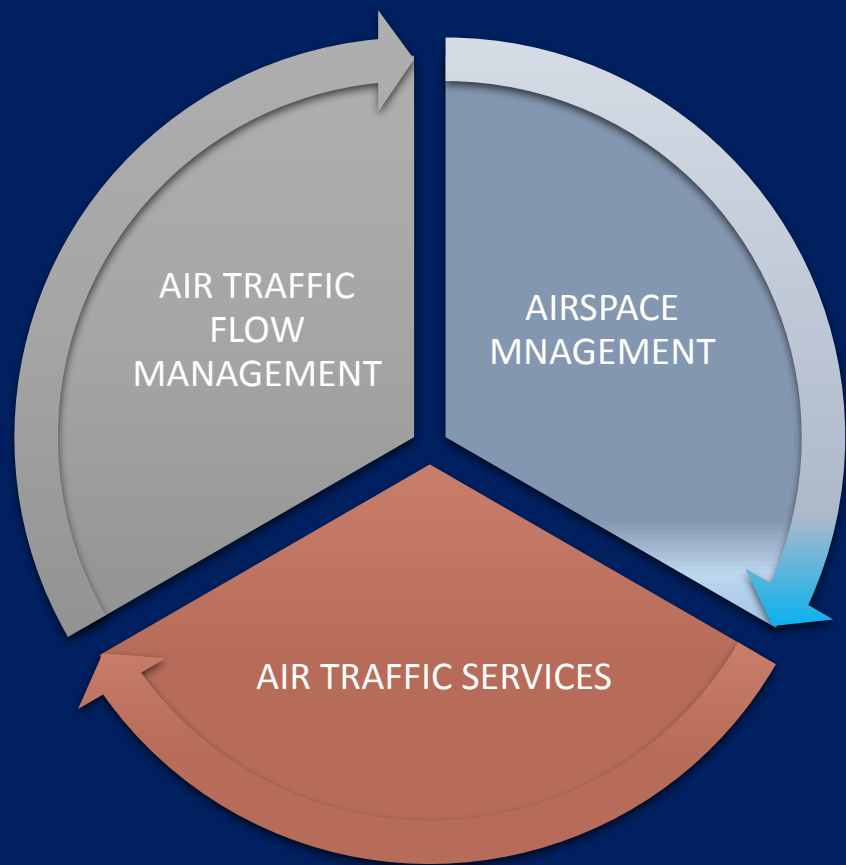
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- Article 44 of the Convention on International Civil Aviation defines the privileges and restrictions of all ICAO Member States and provides for the adoption of International Standards and Recommended Practices (SARPs) regulating international air transport.
- Recognizes and accepts the principle that every State has complete and exclusive sovereignty over the airspace above its territory.



THE CONCEPT OF THE NEW MILENNIUM



ICAO CIR 330

AIRSPACE SHOULD BE

- **Considered as a National Asset & a Single Continuum**
- **Used flexibly on day-to-day basis.**
- **Segregated based on need and preferably temporary**



SEGREGATION VS AGGREGATION

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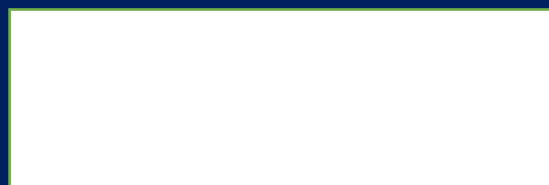




...the **Zebra** is beautiful
'cause the black & white
coexist...



Better to have them and not need them...
Than need them and not have them



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JAN, 2007 - DGCA SUBMITS A REPORT ON FLEXIBLE USE OF AIRSPACE IN INDIA



2008 -09 - INDIAN MULTI DISCIPLINARY CIVIL MILITARY TEAM ON A STUDY TOUR TO US, EUROPE



SEP, 2012 - CABINET NOTE PREPARED BASED ON THE TEM'S REPORT



MAR, 2013 - GOVT. OF INDIA APPROVES THE IMPLEMENTATION OF FUA & CONSTITUTION OF NHLAPB



MAY, 2013 - ROAD MAP FOR IMPLEMENTATION OF FUA SUBMITTED TO THE MINISTRY OF CIVIL AVIATION



OCT, 2013 - NATIONAL HIGH LEVEL AIRSPACE POLICY BODY FORMED



DEC, 2013 - NATIONAL AIRSPACE MANAGEMENT ADVISORY COMMITTEE FORMED



JAN, 2014 TO JUN 2014 - DRAFTING THE MANUAL ON FUA IN INDIA



AUG, 2014 - NHLAPB/4 - ADOPTION OF THE MANUAL ON FUA, INDIA, V 1.0



JUN, 2015 - VALIDATION OF THE MANUAL ON FUA,INDIA V 1.0



JUN, 2015 TO APRIL, 2016 - FUA AWARENESS EDUCATION PROGRAMME





| | | | |
|---|--|------------|--|
| <p>Preamble-objective</p> <p>ii) The FUA Manual has taken into consideration the recommendations of the International Civil Aviation Organization in this regard, ICAO Cir 330, the Global Air Navigation Plan (Doc 9750, especially GPI – 1 which promotes the optimal, balanced and equitable use of airspace by civil and military users. FUA shall be facilitated through both strategic coordination and dynamic interaction, thus allowing the implementation of optimal flight paths, reducing operating costs of airspace users while protecting the environment.</p> | <p>Preamble-objective</p> <p>ii) The FUA Manual has taken into consideration the recommendations of the International Civil Aviation Organization in this regard, ICAO Cir 330, the Global Air Navigation Plan (Doc 9750, especially GPI – 1 which promotes the optimal, balanced and equitable use of airspace by civil and military users. FUA shall be facilitated through both strategic coordination and dynamic interaction, thus allowing the implementation of optimal flight paths, complete operational requirements freedom for military aviation reducing operating costs of airspace users while protecting the environment within the guidelines of the existing national security requirements.</p> | <p>IAF</p> | <p>i) the inclusion of complete operational freedom for military aviation is antithetical to FUA. FUA is applied in available airspace which can be commonly and equitably used. Military flights do have operational freedom within PRAs. The phrase “reducing operating costs of airspace users” applies to both civil and military users.</p> <p>May be dropped</p> <p>ii) May consider including “within the guidelines... security requirements.</p> <p>iii) Alternately May consider including “while protecting the environment, within the guidelines... security requirements and providing for military operational requirements.”</p> |
|---|--|------------|--|



National background-

ii) The main gap identified in the current system is the lack of a policy and procedures for the flexible use of airspace, which hampers airspace design and management by not allowing the application of an optimal airspace structure and the use of optimum flight paths. The limitations that have been identified include the existence of permanently reserved airspace, primarily for military purposes, and the consequent constraints in airspace planning, which prevents direct flights between airports of origin - destination and/or city pairs.

National background-

ii) The main gap identified in the current system is the lack of a policy and procedures for the flexible use of airspace, which hampers airspace design and management by not allowing the application of an optimal airspace structure and the use of optimum flight paths. The limitations that have been identified include the existence of permanently reserved airspace, primarily for military purposes, and the consequent constraints in airspace planning, which prevents direct flights between airports of origin - destination and/or city pairs. **The endeavour would be to permit civil flights through such areas, when not being utilized by the military.**

NAVY

IAF has deleted this point

Whereas, Navy has asked for an addition of a sentence, IAF has deleted this paragraph.

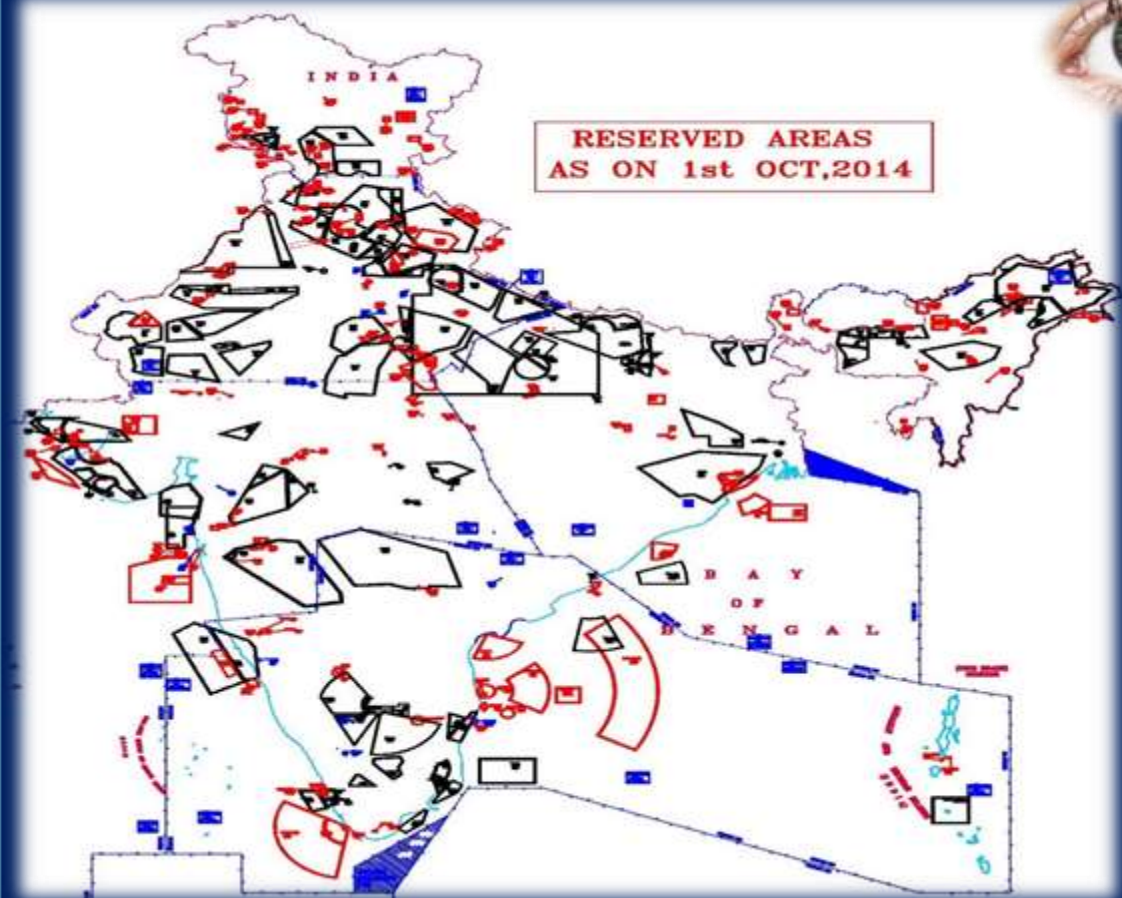
The para contains factual details on constraints in the existing system and therefore, **the Indian Navy suggestion may be agreed to and the IAF's deletion (may be inadvertent) of the paragraph may be disregarded**

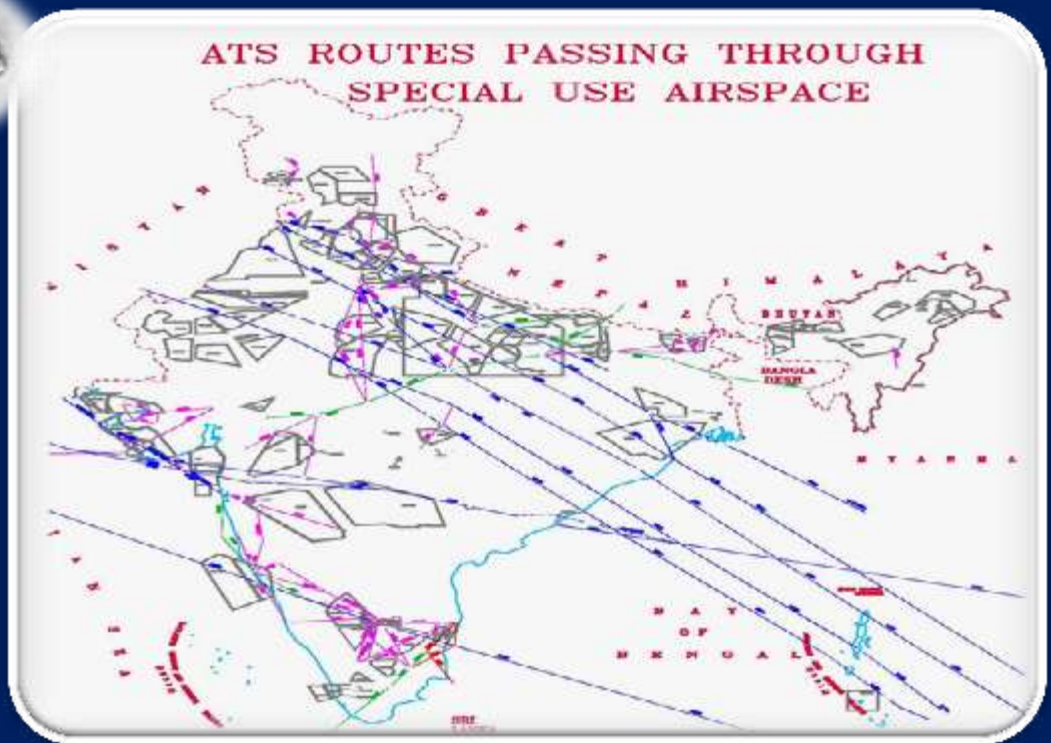
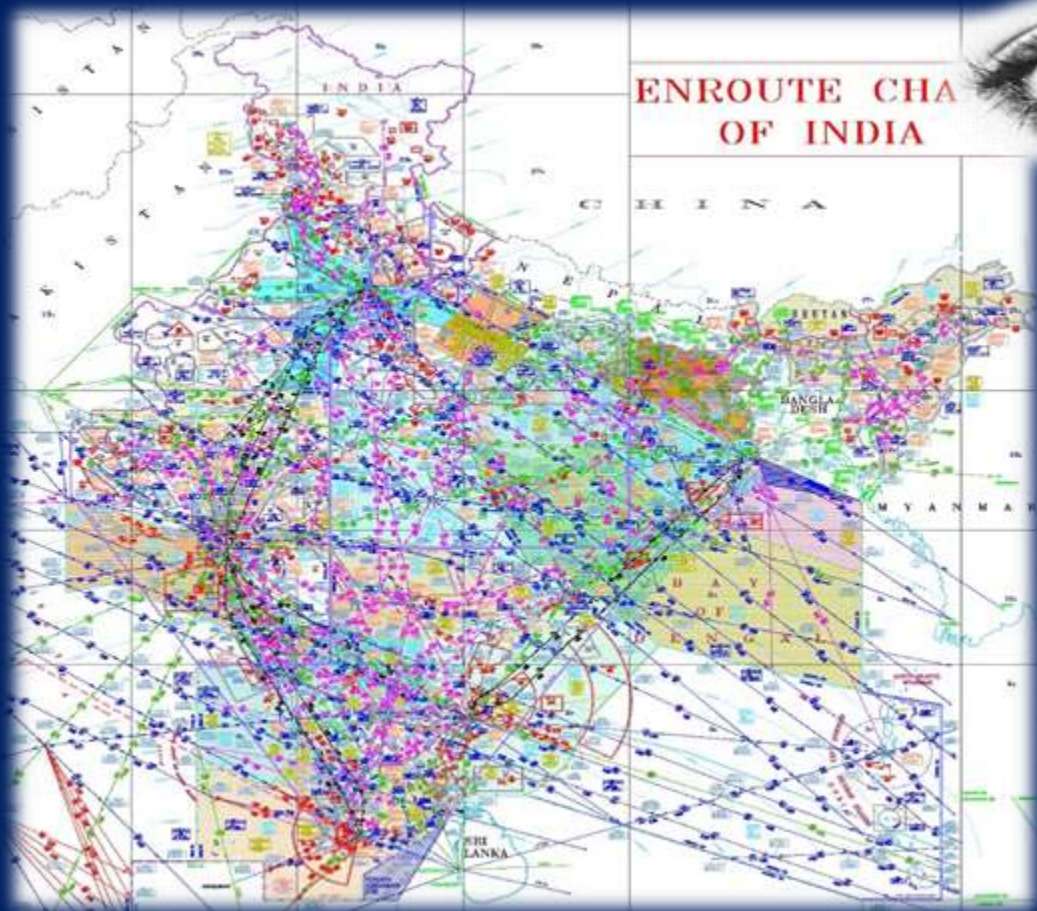
ii) SHOULD BE i).

AND REPHRASE



| | | | |
|--|---|-----------------------------|--|
| <p>Rationale-</p> <p>ii) In the context of the ATM Operational Concept, airspace management (ASM) is the process whereby options for the use of airspace are selected and applied to meet user needs. The objective of ASM is to achieve a more efficient use of airspace, taking into account actual needs and, whenever possible, to avoid permanent segregation of airspace.</p> | <p>Rationale-</p> <p>ii) In the context of the ATM Operational Concept, airspace management (ASM) is the process whereby options for the use of airspace are selected and applied to meet user needs. The objective of ASM is to achieve a more efficient use of airspace, taking into account actual needs</p> <p>and, whenever possible, to avoid permanent segregation of airspace.</p> | <p>IAF AND NAVY</p> | <p>The key phrase is “whenever possible” This is the rai son d'ê tre of FUA.</p> <p>This point should not be excluded</p> <p><u>WHENEVER POSSIBLE TO BE DELETED ACTUAL NEEDS OF ALL USERSTO BE INCLUDED</u></p> |
| <p>Rationale-(iv)</p> <p>a) all available airspace should be managed in a flexible manner;</p> <p>d) the use of airspace should be coordinated and monitored to meet the different requirements of</p> | <p>Rationale-(iv)</p> <p>a) all available airspace may be managed in a flexible manner with the concurrence of military authorities; However military is to be given priority in usage of any airspace.</p> <p>d) the use of non-military airspace should be coordinated and monitored</p> | <p>IAF</p> | <p>The key phrase is “all available airspace”.....</p> <p>Furthermore, the military authorities are fully represented in all bodies which are vested with the responsibility of FUA implementation.</p> <p>This may not be included</p> |







 **60 YEARS OF ROBUST CIVIL MILITARY COOPERATION**

 **CONTINUOUS ENGAGEMENT**

 **MUTUAL TRUST**

 **JOINT USE OF AIRPORTS**

 **JOINT USE OF AIR NAVIGATION FACILITIES**

 **COOPERATION IN AIRSPACE DESIGN**

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**SURVEILLANCE (RADAR) DATA FROM VARIOUS SURVEILLANCE SENSORS TO THE AIR DEFENCE
DIRECTION CENTER (ADDC) OF INTEGRATED AIR COMMAND CONTROL SYSTEM (IACCS)**



MILITARY LIAISON UNIT (MLU) FOR CIVIL-MILITARY LIAISON



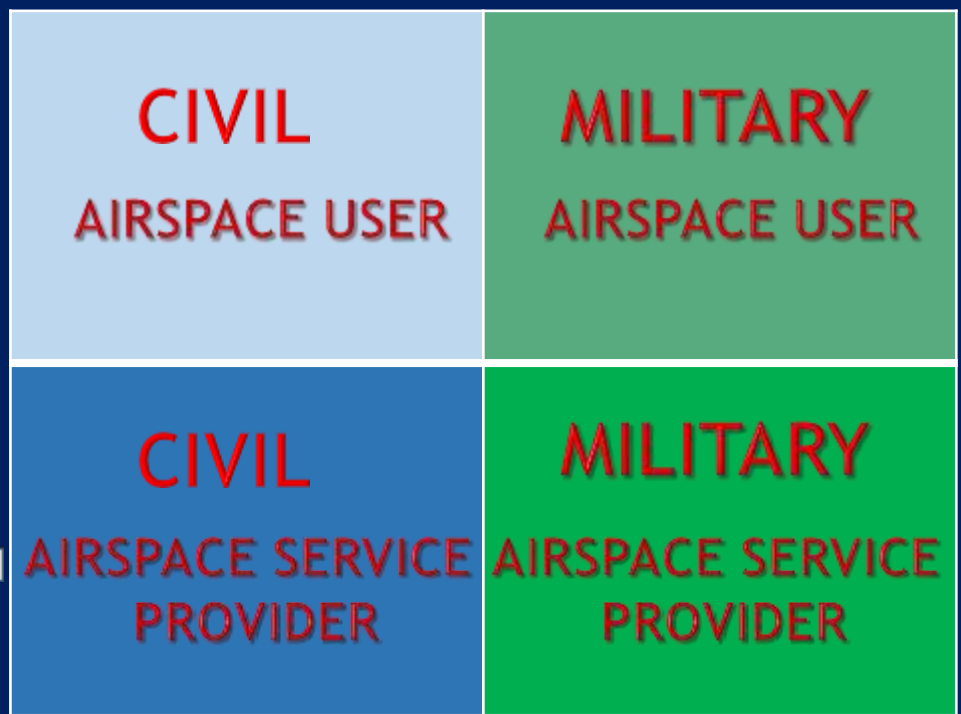
JOINT COMMAND AND ANALYSIS CENTRE (JCAC)



NAVIGATIONAL AIDS AT JOINT USE AERODROMES



CDM THROUGH AIR TRAFFIC FLOW MANAGEMENT (ATFM -CCC)



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 AIR FORCE

 NAVY

 ARMY

 COAST GUARD

 DEFENCE RESEARCH

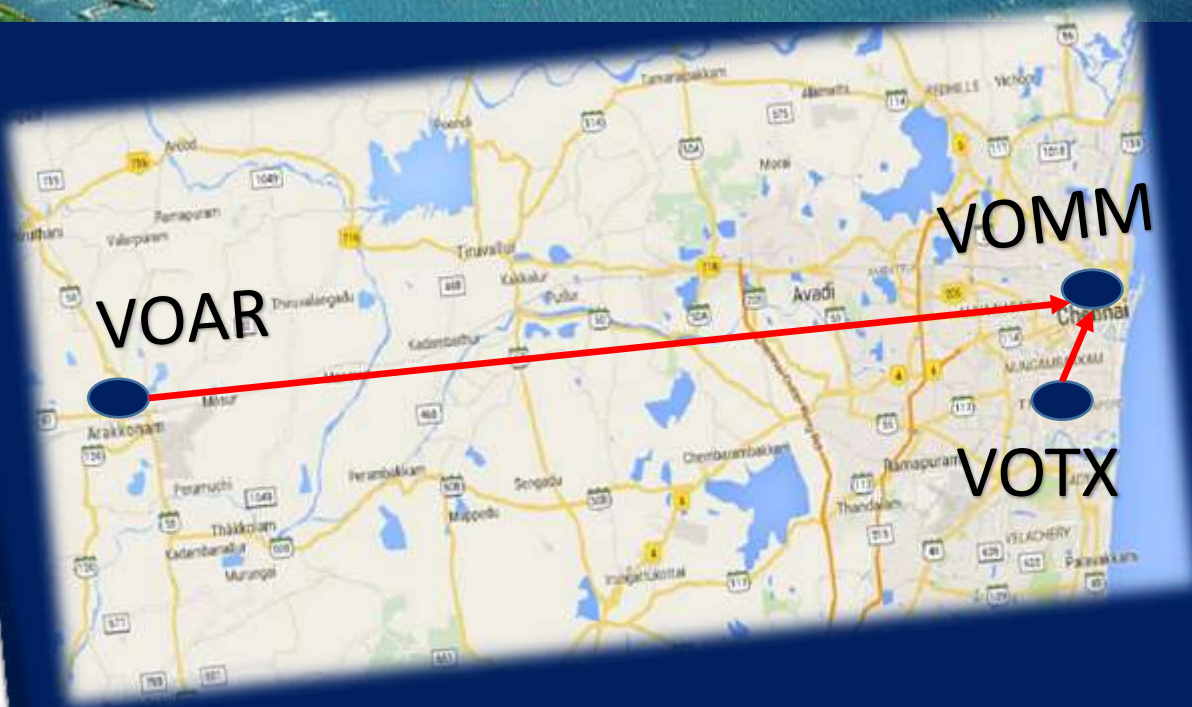
 SPACE RESEARCH

 POLICE RPAs.....



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AIC 191

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1. ROAD TO IMPLEMENTATION OF FUA IN INDIA

1.1 INTRODUCTION

1.1.1 In the report of court of inquiry on collision between Saudi Arabian B747 and Kazakh IL 76 on 11th November, 1995 near Delhi - India, Justice R. C. Lahoti, Hon'ble Judge High Court Delhi has emphasized the importance of civil military coordination. Hon'ble Justice Lahoti has recommended an integrated approach and better cooperation between civil and military authorities in utilizing national resources in airspace.

1.1.2 In January, 2007, the DGCA, India submitted a report on Flexible Use of Airspace in India, stating the necessity to consider the national airspace as a finite asset in which he explicitly stated that the present legislation is sufficient to implement the concept of FUA and only a well-defined mechanism is required for establishing the procedure.

1.1.3 The Ajay Prasad Committee, constituted in the year 2007, to formulate next generation futuristic Air Navigation Services Master Plan, in its report submitted to the Government of India in 2008, refers to "Flexible Use of Airspace" that "the airspace of a nation is a finite asset, which is used for the civil and military flights together or individually. Today the national economy demands flexibility in the airspace utilization for the operation of the civil flights depending on their requirement, which is ever increasing with the growth registered in the civil aviation sector. At the same time there is also need to fulfil the demand of national security, where the use of airspace by the military needs to be fulfilled in the fast changing environment.

1.1.4 In order to study the global best practices on the Flexible Use of Airspace through efficient Civil-Military cooperation, Government of India tasked a high level delegation, comprising officers from the Ministry of Defence, Ministry of Civil Aviation, Indian Air Force, Directorate General of Civil Aviation and Airports Authority of India to study and report its observations on the international best practices of FUA and provide recommendations. The Government of India delegation visited the United States of America, the United Kingdom and Belgium (Eurocontrol) to study the global best practices of FUA implementation.

1.1.5 The Government of India delegation visited the United States of America, the United Kingdom and Belgium and submitted a report with suggestions and recommendations. The committee recommended setting up of a High Level Airspace Policy Body (HLAPB) and a three-tier Airspace Management Model. The delegation has also mentioned that the HLAPB should decide on the harmonization and standardization of civil & military ATC Systems, sharing of data and provision of common inputs as well as standardized CNS/ATM infrastructure at Airports.

1.1.6 In the meeting of the Committee of Secretaries held on 12th October, 2012, the adoption of the FUA concept by India and the establishment of a High Level Airspace Policy Body were proposed. The Cabinet Committee on security approved the proposal on the 18th March, 2013.

1.2 THE NATIONAL HIGH LEVEL AIRSPACE POLICY BODY (NHLAPB)

1.2.1 The Government of India vide order No AV 19032/2009-AAI dated the 14th October, 2013 established the National High Level Airspace Policy Body. The Composition of the NHLAPB is as follows:

| S. No. | Designation/Organization | Status in NHLAPB |
|--------|--|-------------------|
| 1 | Secretary, Civil Aviation | Chairman |
| 2 | Joint Secretary (G/Av), Ministry of Defence | Member |
| 3 | Director General Air (Operations), IAF | Member |
| 4 | Assistant Chief Of The Naval Staff (Av), Indian Navy | Member |
| 5 | Programme Director, Satnav Programme, ISRO | Member |
| 6 | Member (Air Navigation Services), AAI | Member & Convener |
| 7 | Joint Director (In Charge Of Airspace), DGCA | Member |

1.2.2 Major functions and responsibilities of NHLAPB are:

- i. The NHLAPB is vested with the responsibility of implementation of Flexible Use of Airspace (FUA) in India.
- ii. The NHLAPB is responsible for the formulation of National Airspace Use Policy and carries out necessary strategic planning work, taking into account national and international airspace requirement.
- iii. The body also shall develop policy guidelines and procedures for airspace allocation for ASMs, ASM's, ASM's levels and to implement Conditional Routes (CDR) as per the three categories.

1.2.3 The Terms of Reference (TOR) of the NHLAPB are:

- i. Continuous assessment/re-assessment of National airspace usage requirements of various stake holders and Route structures.
- ii. Establishment of Flexible Airspace Use (FUA) structures and the introduction of procedures for the allocation of these airspace structures.
- iii. To improve safe and effective regulation and Management of airspace and its supporting infrastructure.
- iv. To classify the airspace allocation in two categories, namely Permanently Restricted Areas and Temporary Segregated Areas (TSA) or Temporary Reserved Areas (TRAs).
- v. To improve coordination for implementation and harmonization of Civil and Military ATC Systems with common features and applications.
- vi. Standardize CNS/ATM infrastructure at airports.
- vii. To setup appropriate committees/sub-committees/advisory bodies at appropriate levels for implementation or taking suitable decisions for implementation of FUA in India.
- viii. Any other issue vital to Flexible Use of Airspace in India.



There is no secret ingredient.
To make something special,
you just have to believe it's special.

~Mr. Ping

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INDIA HAS PRESENTED A GENERIC VERSION OF THE FUA MANUAL TEMPLATE IN A RECENT MEETING AT ICAO APAC OFFICE BANGKOK FOR USE BY MEMBER STATES....



In Airspace Management there is only one

F.U. A T.U.R.E.

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