

## **About the New DDPMAS**

### **1.0 Introduction :**

DDPMAS 2002 was a single document bringing out the procedure to be followed for design & development, production, modification, license production and indigenization of aircrafts and airborne stores in the Indian military airworthiness regulatory framework. This was jointly released by the Secretary (Defence Production and Supplies) and Secretary Defence (Research & Development) in the year 2002. This document has been in usage and serving its purpose as the procedural and regulatory framework on which several milestone achievements have been made in Indian Military Aeronautics for the last two decades.

Taking into consideration of the rapid advancements in the contemporary Indian Aeronautical scenario, with significant expansion in the design, development and production activities, increasing accent on self-reliance, indigenisation activities with more and more Public Sector Undertakings, Private entrepreneurs and small scale industries participation in-line with the Make-in-India Policy of the government, it is time for the DDPMAS to undergo a revision.

### **2.0 Guidelines for new DDPMAS :**

The new DDPMAS has been written to address the following.

- a. To make it contemporary
- b. Incorporate the inputs from stakeholders
- c. Facilitate Private Industries participation & Make-in-India Policy
- d. To be in-line with the latest Defence Procurement Procedures (DPP)
- e. To bring it out in a clear, demarcated, structured, coherent and hierarchical manner
- f. To make it process dependent
- g. Enhance readability and ease of implementation
- h. To be in-line with the International Airworthiness community

### **3.0 What's new ?**

- a. New chapters on Unmanned Aerial Systems (UAS), Air Launched Missiles (ALM), Research aircrafts, Civil Certified Military aircrafts, Continued and Continuing airworthiness, Organisation Approvals, Exports, have been added to be contemporary and address obsolescence.
- b. Inputs from various stakeholders regarding the impediments and difficulties in following the DDPMAS have been addressed in the DDPMAS wherever technically found to be in order without compromising the philosophy of airworthiness.
- c. Clear and unambiguous demarcation for the requirements for aircrafts and airborne stores. Requirements for Engines, Materials, Software, identification of parts, Test rigs, Tools, Testers and Ground Equipment (TTGEs) are also separately addressed.
- d. To facilitate private industries and Make-in-India policy, organisation approvals for Design, Production and Maintenance have been added. Airworthiness coverage to private industries, even when no expression of interest or supply order from the government exists, has also been addressed.

- e. The document also addresses airworthiness and certification for every acquisition model as per the DPP.
- f. Future of military aviation will involve Joint ventures and Consortiums with individual defined work packages with design houses of foreign origin. This will entail mutual recognition of design and certification methodologies. In order to facilitate international understanding, co-operation and success of the ventures leading to acquiring strategic technologies for our armed forces and military exports for our country, this DDPMAS has introduced global parlance and internationally followed terminologies with one-to-one-mapping of equivalent regulatory articles wherever applicable to Indian processes and procedures. This is done to be in-line with the international order for airworthiness and certification. The new terminologies are well defined in the definitions section of the document.
- g. In order to enhance readability, ease of implementation, and making it process dependent, the DDPMAS document is presented in a structured, coherent & hierarchical manner comprising of **POLICY, REGULATIONS and MANUALS.**
  - i. The **Policy** defines roles, responsibilities and empowerment of stakeholders to address airworthiness in various scenarios and facets of the aircsystem life cycle.
  - ii. **Regulations** are procedures and technical requirements for specific phase in the development life cycle of an aircsystem /airborne store that facilitate the applicants or the stakeholders to unambiguously process and procure Approvals, Clearances and Airworthiness Certificates from the Airworthiness Authorities for their products.
  - iii. The **Manuals** refer to templates, forms, circulars, airworthiness directives and airworthiness certification criteria documents that may be referred to by the applicants and facilitates in implementing the regulations towards ensuring airworthiness. ( **Note:** The present document does not contain manuals. The Manuals will be available as part of the final document and in website )

**The DDPMAS POLICY :**

The policy is brought out in the following chapters,

CHAPTERS	TITLE
<b>PART 1 - MANAGEMENT FRAMEWORK</b>	
Chapter 1	Introduction to Indian Military Airworthiness
Chapter 2	Indian Military Airworthiness Framework
Chapter 3	Military Acquisition Models
<b>PART 2 - DESIGN DEVELOPMENT &amp; PRODUCTION - POLICY</b>	
Chapter 1	Ab-Initio Design, Development, Production and Certification of Aircsystems & Airborne Stores
Chapter 2	Licensed Production Of Air Systems And Airborne Stores
Chapter 3	Bought- Out Air Systems And Airborne Stores
Chapter 4	Continuing Airworthiness & Continued Airworthiness
Chapter 5	Flight Testing Of Air Systems And Airborne Stores

Chapter 6	Unmanned Aerial Systems
Chapter 7	Air Launched Missiles (ALM)
Chapter 8	Research Air Systems And Airborne Stores
Chapter 9	Civil Certified Military Aircraft
Chapter 10	Export of Indigenous Airsystems and airborne stores
Chapter 11	Organisation Approvals
Chapter 12	Indigenous Substitution of Airborne Stores

The Policy document is structured in two parts, Part 1 and Part 2. Part 1 consists of three chapters, the present introduction chapter, the military airworthiness framework chapter and the military acquisitions chapter. These three chapters are aimed at introducing the readers to a prelude of various activities of military airworthiness in the country, the airworthiness framework and the acquisition models of the services that needs to be addressed for its airworthiness. It is strongly recommended to read these chapters to set the base for further chapters.

Part 2 contains 12 chapters that deals with the airworthiness policies for various scenarios.

#### **REGULATIONS :**

The Regulations are brought in a separate document called Indian Military Technical Airworthiness Regulations -21 (IMTAR -21). The technical airworthiness requirements at various phases in the development life cycle of the aircsystem and the airborne stores is captured in Subparts. The applicant has to follow the requirements of the applicable subpart to procure the necessary certification from the airworthiness authorities, thereby making it a process dependent approach.

The IMTAR-21 is divided into SUBPARTs as follows.

The subparts and their corresponding titles are as follows,

<b>SUBPART</b>	<b>TITLE</b>
SUBPART A	General Procedure for Indian Military Airworthiness
SUBPART B	Ab-initio Development of Air System Leading to RMTC/MTC and Production
	B1: Ab-Initio Development of Aircraft
	B2: Ab Initio Development of Unmanned Air Systems (UAS)
	B3: Ab-Initio Development of Air Launched Missiles (ALMs)
SUBPART C	B4: Ab-Initio Development of Aero Engines and Sub Systems
	Ab-initio Development of Airborne Stores Leading to IMTSOA / L o A / TA
	C1: Ab-Initio Design & Development of Airborne Stores Leading to Issue of Type Approval
	C2: Ab-Initio Design & Development of Air Armament Stores and Air Launched Weapons Leading to Issue of Type Approval
	C3: Airborne Stores which are Materials and Standard/AGS Parts of Metallic and Non-metallic, in Accordance with Officially Recognised Standards/Approved CEMILAC Test Plan not Specific to any Platform Leading to LoA
C4: Ab-initio Development of Airborne Stores leading to LoA	
C5: Airborne Stores, for which IMTSO Exists, Leading to IMTSO Approval	

SUBPART	TITLE
	(IMTSOA)
	C6: Airborne / Ground System Software And Complex Electronic Hardware (CEH)
SUBPART D	Modifications of Air Systems Leading to AMTC/SMTC
SUBPART E	Modifications of Airborne Stores
SUBPART F	Production of Air Systems and Airborne Stores
SUBPART G	Organisation Approvals:
	G1: Design Approved Organisation Scheme
	G2: Production Approved Organisation Scheme
	G3: Maintenance Approved Organisation Scheme
SUBPART H	Certificates of Airworthiness (CoA) for Air Systems and Airborne Stores
SUBPART I	Research Aircraft
SUBPART K	Indigenous Substitutions of Airborne Stores
SUBPART L	Continued & Continuing Airworthiness
SUBPART M	Repairs
SUBPART N	Bought Out Air Systems and Airborne stores
SUBPART P	Flight Testing of Air Systems and Airborne Stores
SUBPART Q	Identification Of Air Systems and Airborne stores
SUBPART R	Civil Certified Military Aircraft
SUBPART S	Customer Furnished Equipment and Customer Specified Equipment
SUBPART T	T1: Test Rigs T2: Tools, Testers & Ground Equipment (TTGE)
SUBPART U	Mutual Recognition

Each Subpart contains all the applicable regulations within the scope of the subpart title, that represents a facet in the Indian Military Technical Airworthiness Regulatory Framework. The regulations cover the technical airworthiness requirements for the aircsystem/airborne store at various development phase within the scope of the subpart title.

The Subpart is organised as Rationale, Contents, Regulation, Acceptable Means of Compliance and Guidance Materials.

**Rationale** : Each Subpart identifies a Rationale as a basis for the regulations.

**Contents** : Rationale is followed by the contents of the Subparts, that captures the numbered topics/titles of the regulations.

**Regulation** : The Regulation is described and is uniquely numbered with the Regulatory Clause.

**Acceptable Means of Compliance (AMC)**: Each Regulation is supported with Acceptable Means of Compliance (AMC), which are nonexclusive means of demonstration of compliance with the regulation and the Technical Airworthiness Authorities. Alternate and equivalent means may also be listed wherever applicable.

**Guidance Material** : The Regulation also lists certain guidance material that may be used by the applicant to facilitate in meeting the AMC, thereby complying to the Regulation. This is to be strictly used only as guidelines and shall not be viewed as an equivalent to AMC.