



# IAF INDIGENISATION REQUIREMENTS AND PROCEDURES

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# SCOPE

- **INTRODUCTION**
- **ORGANISATION STRUCTURE**
- **GUIDING DOCUMENTS**
- **DEFINITION/ NEED/ SUBSET OF INDIGENISATION**
- **RESPONSIBILITIES/ROLE OF BASE REPAIR DEPOT**
- **CHALLENGES**
- **CRITERIA FOR SELECTION**
- **NODAL TECHNOLOGY CENTRES**
- **SPECIFIC REQUIREMENTS**
- **INDIGENISATION PROCESS**
- **WAY AHEAD**
- **CONCLUSION**

# INTRODUCTION

- A LARGE INVENTORY OF LEGACY SYSTEMS ACQUIRED EX-FOREIGN, MAINLY FROM RUSSIA, FRANCE.
- LIMITED PRODUCT SUPPORT FROM THE OEMS.
- IAF ENTERED THE FIELD OF 'SELF RELIANCE' IN EARLY 1990s.



# INTRODUCTION

- BRDs HAVE SUCCESSFULLY INDIGENISED MORE THAN 46000 SPARES TILL DATE.
- SIGNIFICANT CONTRIBUTOR TO THE 'MAKE IN INDIA' INITIATIVE.
- THE PROCESS OF INDIGENISATION HAS EVOLVED GRADUALLY.



# ORGANIZATION STRUCTURE

- STRUCTURED MECHANISM EXISTS AT AIR HQ, HQ MC AND BRDS
- AT AIR HQ : ACAS(MP) -- PD (INDG) -- D INDG
- AT HQ MC : DY SMSO -- C ENG O(COORD) -- C INDG O
- AT BRDS : C GED -- SPE (ISC)

# GUIDING DOCUMENTS

- **DDPMAS - 2002**
- **DPM - 2009, SUPPLEMENT - 2010 & DFPDS – 2016**
- **MANUAL OF INDIGENISATION – 2017**
- **INDIGENISATION ROADMAP IAF : 2016 -2025**

# DEFINITION

*“Application Of Technology And Utilization Of Resources Available Within The Country To Develop A Near Airworthy Equivalent To The Original And Ensure Reliable Supply”*

# NEED FOR INDIGENISATION

TECHNOLOGICAL OBSOLESCENCE

RAPIDLY DIMINISHING PRODUCT SUPPORT FROM OEMS

PREVENTING THE WEAPON SYSTEMS FROM BECOMING NON-OPERATIONAL

TIMELY SUPPLY OF VARIOUS ARS SPARES OF NEW INDUCTIONS



# **NEED FOR INDIGENISATION**

**ACHIEVE SELF RELIANCE IN DESIGN, DEVELOPMENT AND PRODUCTION**

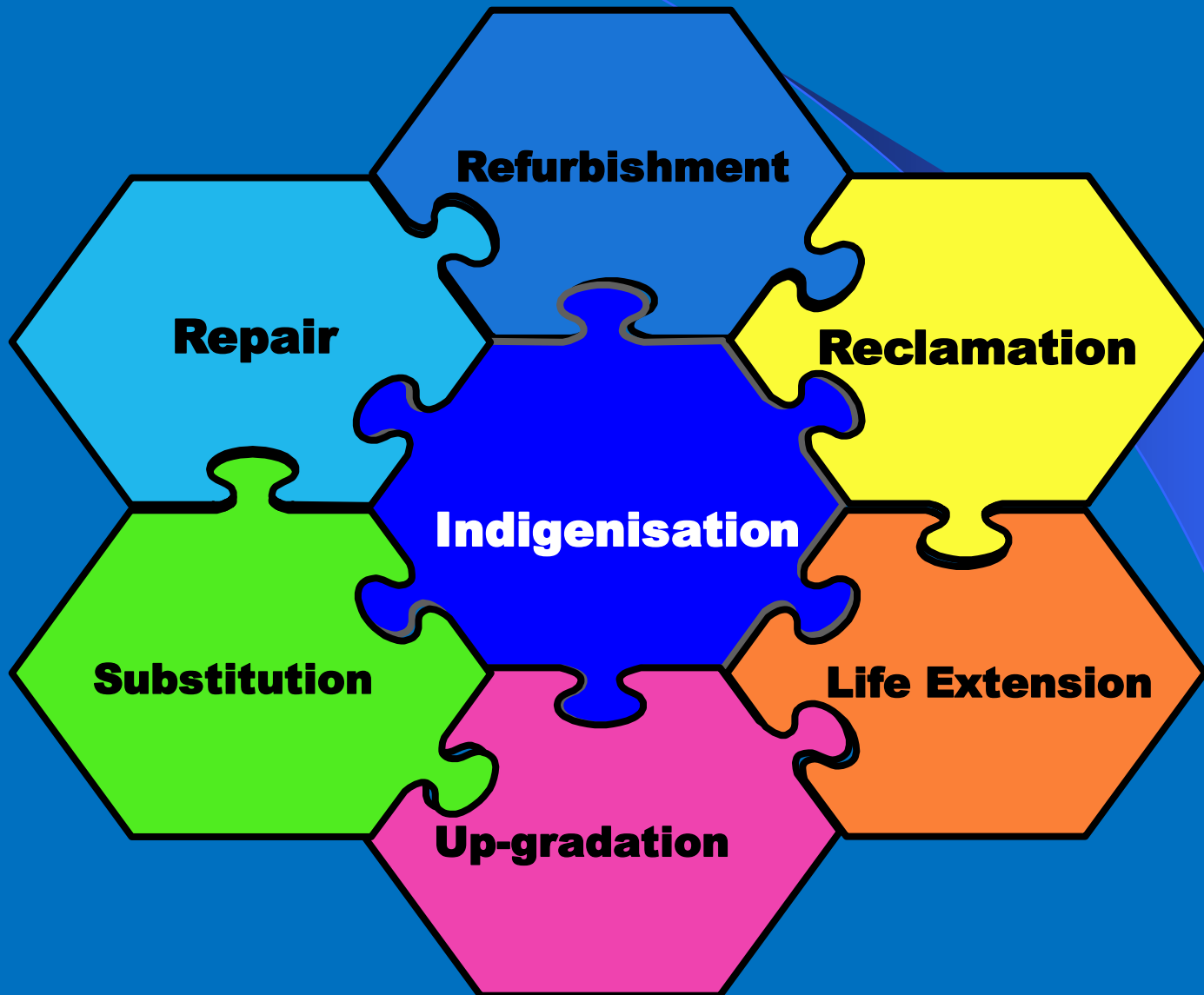
**CREATE CONDITIONS CONDUCIVE FOR PRIVATE INDUSTRY TO BE ACTIVE**

**ENHANCE THE POTENTIAL OF SMALL AND MEDIUM ENTERPRISES**

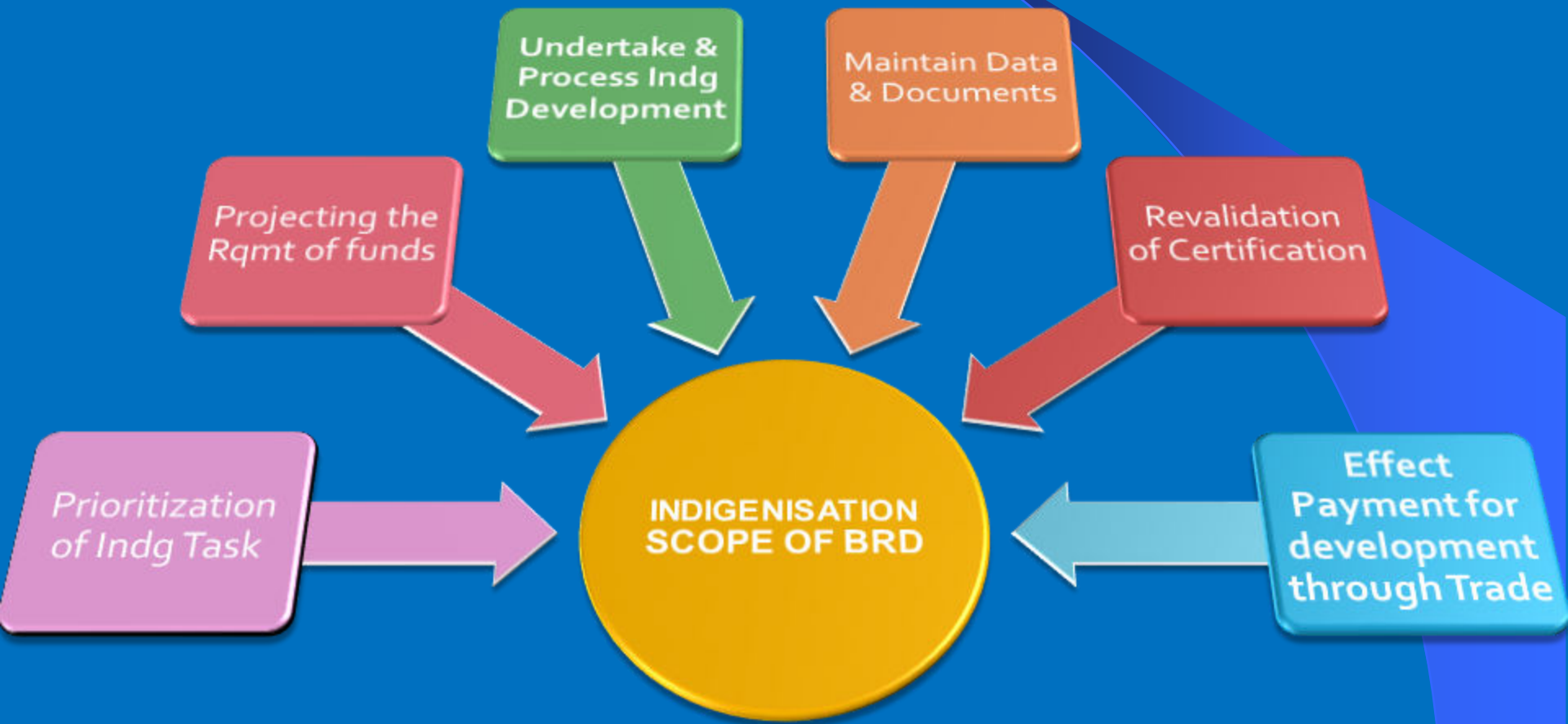
**BROADEN THE DEFENCE RESEARCH AND DEVELOPMENT BASE OF NATION**

**SAVING OF PRECIOUS FOREIGN EXCHANGE**

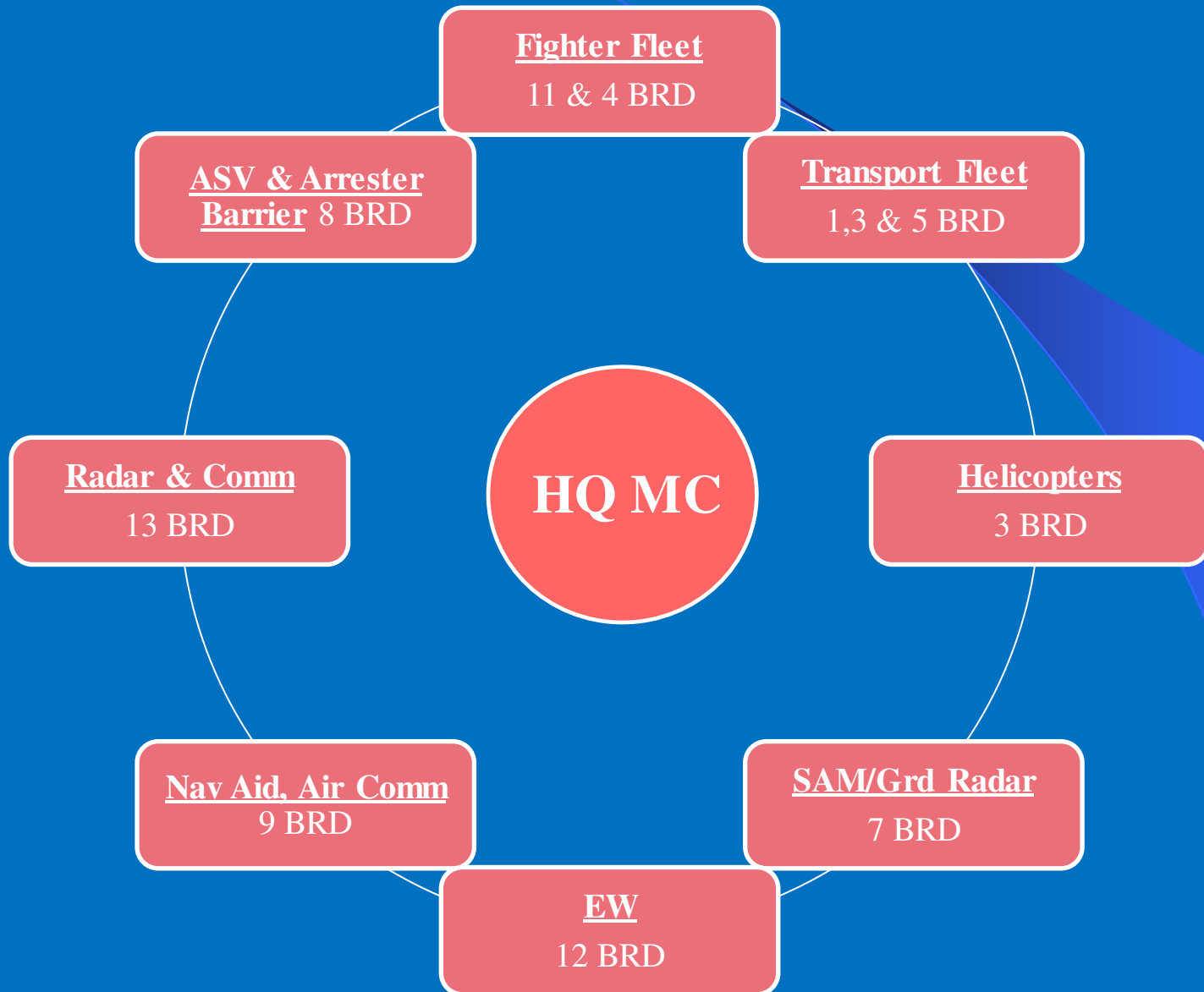
# INDIGENISATION SUBSET



# RESPONSIBILITY OF BRD



# ROLE OF BRD



# CHALLENGES

- **MOQ**
- **RAW MATERIAL**
- **NON-AVAILABILITY OF MANUFACTURING TECHNOLOGY**
- **STRINGENT QUALIFICATION AND CERTIFICATION REQUIREMENT**
- **LACK OF T<sub>o</sub>T FROM OEM**

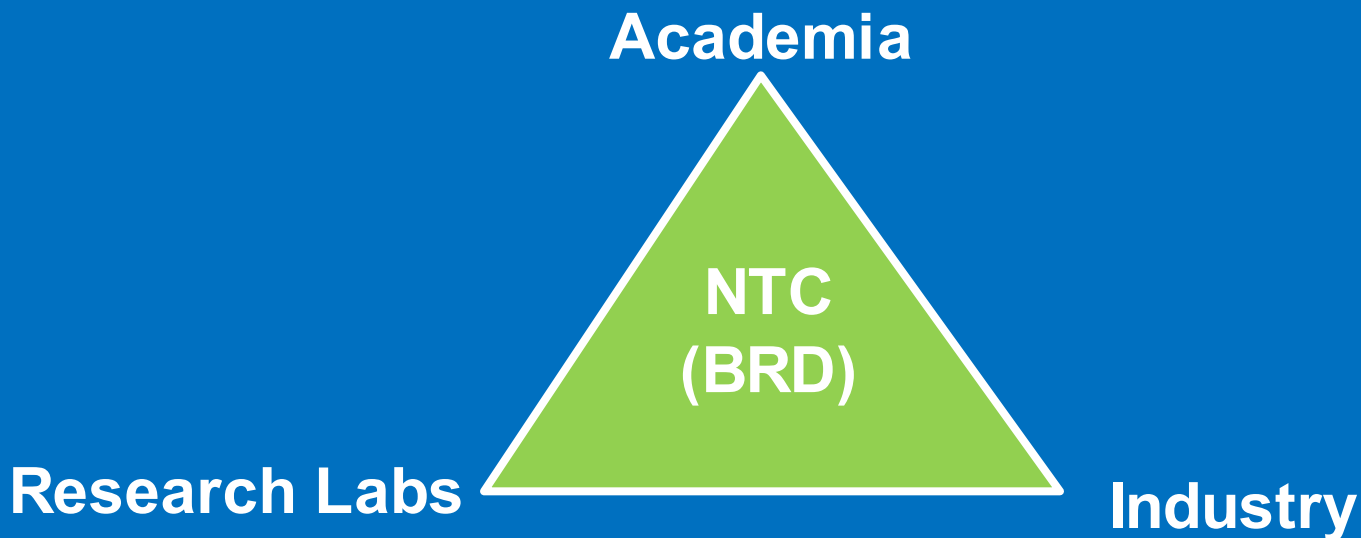
# CRITERIA FOR SELECTION

FOUR VITAL CRITERIA FOR SELECTION OF ITEM ARE :

- NEED
- COMPLEXITY
- TECHNOLOGY
- ECONOMIC VIABILITY

# NODAL TECHNOLOGY CENTRE

To create a collegium of BRDs with the R&D Organisations, Academia and Industry, so as to conceptualise and execute technologically complex projects for enhanced availability of weapon delivery platforms and systems



# **FUNCTIONS OF NTC**

**Create and utilise state-of-the-art facilities for undertaking innovative 'Make in India' projects**

**Periodic meetings and visits to / from R&D labs, academia and industry**

**Review of on-going projects and identification of new projects**



# NODAL TECHNOLOGY CENTRE

SI No	Nodal BRD	NTC Number	Specialisation/ Centre of Excellence	Academic Institute	Major DRDO/ CSIR Labs
1	1 BRD	1 NTC	Aerospace Engg	IIT Kanpur	NAL, ADE, DMRL
2	3 BRD	3 NTC	Industrial Engg & Reclamation Tech	IIT Roorkee	NAL, DMRL, ARCI, IICT
3	4 BRD	4 NTC	Aeroengine & Material Testing	IIT Kanpur	GTRE
4	5 BRD	5 NTC	Instrumentation & Controls	IIT Madras IISc Bengaluru	CSIO, BEL, IRDE
5	7 BRD	7 NTC	SAGW (surface to air guided weapons) systems	IIT Kharagpur	RCI, ARDE, ASL, LRDE
6	8 BRD	8 NTC	Specialist Vehicles & Arrestor Barrier	IIT Madras	BEML
7	9 BRD	9 NTC	Electronics & Electro-optics Systems	IIT Bombay	BEL, CABS, DLRL, DEAL, LASTEC

# NODAL TECHNOLOGY CENTRE

SI No	Nodal BRD	NTC Number	Specialisation/ Centre of Excellence	Academic Institute	Major DRDO/ CSIR Labs
8	11 BRD	11 NTC	Aerospace Structures & Lifting Review Studies	IIT Bombay	NAL NML HEMRL
9	12 BRD	12 NTC	EW Systems	IIT Kharagpur IIT Guwahati	DARE BEL
10	13 BRD	13 NTC	Radar & Information Technology	IIT Delhi DTU	RCI ASL LRDE
11	14 BRD	14 NTC	DG Sets & UPS	IIT Guwahati	BEL
12	15 BRD	15 NTC	Electronics & Power Systems	IIT Bombay LD College of Engg, Ahmedabad	BEL
13	16 BRD	16 NTC	Aircrew Safety & Survival Systems	DIAT	ADRDE
14	28 ED	28 NTC	Air Armament Systems	DIAT	ARDE TBRL

# KEY AREAS OF INDIGENISATION

## 1. STRUCTURE

### ➤ CANOPYs AND WIND SHIELDS

- CANOPY AND WIND SHIELDS FOR MOST FLEETS BEING IMPORTED

### ➤ LOW TECHNOLOGY FAST MOVING ITEMS

- NUTS, BOLTS, WASHER, SPLIT PINS AND SEALING RINGS

### ➤ PIPELINES AND BRACKETS

- FUEL HYDRAULIC PNEUMATIC PIPELINES
- VARIOUS TYPES OF BRACKETS FOR HOLDING PIPELINES, LRUs

# **KEY AREAS OF INDIGENISATION**

## **1. STRUCTURE**

### **➤ AIRCRAFT FUSELAGE**

- **PANELS, RIBS eg. LCA OUTSOURCED BY HAL**

### **➤ CONTROL SURFACES**

- **MANUFACTURE OF CONTROL SURFACES OUTSOURCED BY HAL TO INDIAN INDUSTRY FOR SU – 30 MKI AC**
- **LIMITED REQUIREMENT BY IAF DURING REPAIR AND OVERHAUL**

# KEY AREAS OF INDIGENISATION

## 1. STRUCTURE

### ➤ MAIN AND TAIL ROTOR BLADES FOR HELICOPTERS

- NEED FOR MANUFACTURING OF ROTOR BLADES FOR MI SERIES HELICOPTERS
- REQUIREMENT HOSTED ON MoD AND IAF WEBSITE

### ➤ DROP TANKS

- MIRAGE 2000 AIRCRAFT

# KEY AREAS OF INDIGENISATION

## 2. AVIONICS

### ➤ MULTI FUNCTION DISPLAYS (MFDs)

### ➤ LRUs FOR VARIOUS SYSTEMS

- GYROs, POWERSUPPLY UNITS, TRANSDUCERS, INVERTERS
- CERTAIN ITEMS IDENTIFIED AND HOSTED ON IAF WEBSITE
- FLIGHT CONTROL SYSTEMS
- AUTO PILOT AND FLY BY WIRE SYSTEMS

### ➤ SIMULATORS

- AIRCRAFT, RADARS, MISSILE SYSTEMS

# KEY AREAS OF INDIGENISATION

## 2. AVIONICS

### ➤ POWER SUPPLIES AND PCBs

- REQUIREMENT DURING REPAIR AND OVERHAUL OF VARIOUS COMPONENTS

### ➤ CABLES AND HARNESSSES

- REQUIREMENTS EXIST FOR VARIOUS AIRCRAFT FLEETS, eg. MiG- 29
- REQUIREMENTS HOSTED ON IAF WEBSITE

# KEY AREAS OF INDIGENISATION

## 3. AEROENGINE

### ➤ COMPRESSOR AND TURBINE BLADES

- PROJECT FOR Mi-17 AND AN-32 ENGINE BLADES IN PROCESS AT HAL KORAPUT

### ➤ BEARINGS

- REQUIREMENTS UPLOADED ON IAF WEBSITE

### ➤ SEALS

### ➤ GLUES FOR AEROENGINE APPLICATION

- VK – 2 GLUE UNDER DEVELOPMENT THROUGH IICT, HYDERABAD



# KEY AREAS OF INDIGENISATION

## 4. TOOLS TESTERS, GROUND SUPPORT EQUIPMENT

- TTGEs INDIGENISED FOR LARGE NUMBER OF LEGACY FLEETS AND SYSTEMS
- NEED TO INDIGENISE COMPLETE RANGE FOR ALL AIRCRAFT FLEETS AND SYSTEMS

## 5. AIRCRAFT TYRES AND TUBES

- SU-30 MKI MAIN AND NOSE WHEEL TYRES DEVELOPED AND IN USE
- DEVELOPMENT OF TYRES FOR OTHER FLEETS IN PROGRESS

# KEY AREAS OF INDIGENISATION

## 6. MISCELLANEOUS

- **DAG TROLLEYs FOR MIRAGE AC**
- **UNIVERSAL JET BLAST DEFLECTOR**
- **UNIVERSAL GROUND POWER UNIT**
- **AIRCRAFT ANTENNAs**
- **FUEL OIL AND LUBRICANTS (FOL)**
  - FOL FOR MOST AIRCRAFT FLEETS INDIGENISED BY M/s AVI OIL
  - ABOUT ELEVEN LINES OF OIL STILL BEING IMPORTED
- **FILTERS**
  - FUEL, HYDRAULIC, ENGINE OIL FILTERS
- **AIRCRAFT BATTERIES**
  - INDIGENISED FOR MOST LEGACY FLEETS
  - CASE INITIATED FOR INDIGENISATION OF BATTERY FOR PC-7 MK-II

# INDIGENISATION PROCESS

- SOC APPROVAL
- HOSTING OF EOI
- BENCHMARKING AND AON SANCTION
- FLOATING OF RFP ON CPPP
- OPENING OF TECH BID & COMMERCIAL BID

# INDIGENISATION PROCESS

- **ISSUE OF DEVELOPMENT ORDER**
- **FUNCTIONAL TEST OF PROTOTYPE**
- **DOCUMENTATION & AWARDING OF LC**
- **CLEARANCE OF BILLS**

# INDIGENISATION PROCESS

## HOSTING OF EOI ON CPP PORTAL

❑ EOI (EXPRESSION OF INTEREST) HOSTED ON [WWW.EPROCURE.GOV.IN](http://WWW.EPROCURE.GOV.IN) ON OTE (OPEN TENDER ENQUIRY) BASIS

❑ EOI INCLUDES

- NAME OF THE PROJECT
- PLACE
- TIMEFRAME
- TECHNICAL DETAILS
- CLARIFICATION START AND END DATES
- BID SUBMISSION START AND END DATES
- VENDOR ELIGIBILITY CRITERIA.

# **INDIGENISATION PROCESS**

## **HOSTING OF EOI ON CPP PORTAL**

- ❑ CAPABLE VENDORS SUBMIT NON BUDGETARY QUOTES WHICH INCLUDES**
  - PROTOTYPE COST**
  - DEVELOPMENT COST**
  - FUTURE COST**
  - APPLICABLE TAXES.**
  
- ❑ ADDITIONAL DOCUMENTS TO BE ATTACHED WHILE EXPRESSING INTEREST :**
  - COMPANIES PROFILE/REGISTRATION DETAILS**
  - FINANCIAL DETAILS OF LAST THREE YEARS**
  - RECORDS OF CURRENT PROJECTS IN HAND**
  - ANTICIPATED TIME FRAME FOR EXECUTION OF PROJECT**
  - DETAILED ROAD MAP OF PROJECT EXECUTION**
  - DETAILS OF EXPERIENCE/LIST OF ITEMS DEVELOPED FOR DEFENCE AND GOVT PSUs.**

# INDIGENISATION PROCESS

## HOSTING OF EOI ON CPP PORTAL

The screenshot displays the Government of India Central Public Procurement Portal (CPPP) interface. The header features the Government of India logo and the text "Government of India Central Public Procurement Portal (ePublishing)". The navigation bar includes links for "Search", "Active Tenders", "Tenders by Closing Date", "Corrigendum", "CPPP HOME", "Bid Awards", "Home", "Contact Us", and "SiteMap". The date "18-Sep-2018" is displayed on the left. The main content area is titled "Advanced Tender Search" and includes a "Back" button. The search form contains the following fields:

Tender Type *	Open Tender	Tender ID	<input type="text"/>
Secretariat Type	-Select-	Tender Reference Number	<input type="text"/>
Secretariat	-Select-	Work/Item Title	<input type="text"/>
Organisation	Indian Air Force	Tender Category	-Select-
Department	-Select-	Product Category	-Select-
Division	-Select-		
Sub Division	-Select-		
Form of Contract	-Select-		
Pincode	110080		
Value Criteria	-Select-		
Date Criteria	-Select-	From	To

The search form also includes "Clear" and "Search" buttons. The left sidebar contains navigation links: "MIS Reports", "Tenders by Location", "Tenders by Classification", "Tenders in Archive", "Cancelled/Retendered", "Downloads", "Announcements", "Recognitions", "Site compatibility", and "Related Links".

# INDIGENISATION PROCESS

## BENCHMARKING OF COST AND AON (ACCEPTANCE OF NECESSITY) SANCTION

- ❑ BASED ON THE NON BUDGETORY QUOTES RECEIVED FROM CAPABLE VENDORS, **BENCHMARKING** OF THE COST IS CARRIED OUT
- ❑ **AON** IS OBTAINED FROM CFA (IN CONSULTATION WITH IFA WHERE APPLICABLE) BEFORE PROCESSING THE INDIGENISATION CASES.



# INDIGENISATION PROCESS

## FLOATING OF RFP ON CPP PORTAL

RFP IS HOSTED ON [WWW.EPROCURE.GOV.IN](http://WWW.EPROCURE.GOV.IN) ON OPE BASIS

RFP HAS FIVE PARTS:

**PART- I** : CONTAINS **GENERAL INFORMATION AND INSTRUCTIONS** FOR THE BIDDERS SUCH AS TIME, PLACE OF SUBMISSION AND OPENING OF TENDERS, VALIDITY PERIOD OF TENDERS.


**PART- II** : CONTAINS ESSENTIAL DETAILS OF THE ITEMS/SERVICES REQUIRED, SUCH AS SCHEDULE OF REQUIREMENTS, **TECHNICAL SPECIFICATIONS**, **DELIVERY PERIOD**, MODE OF DELIVERY AND CONSIGNEE DETAILS.

**PART-III** : CONTAINS **STANDARD CONDITIONS OF RFP**, WHICH WILL FORM PART OF CONTRACT WITH SUCCESSFUL BIDDER.


**PART-IV** : CONTAINS **SPECIAL CONDITIONS** APPLICABLE TO RFP.

**PART – V** : CONTAINS **EVALUATION CRITERIA AND FORMAT FOR PRICE BIDS**.

# INDIGENISATION PROCESS



**PRE BID CONFERENCE** WITH VENDORS IS CARRIED OUT TO CLARIFY ISSUES AND DOUBTS, IF ANY, ABOUT THE SPECIFICATIONS AND OTHER TECHNICAL DETAILS.



**CAPACITY ASSESSMENT** OF UNREGISTERED FIRMS ARE CARRIED OUT IN TERMS OF THEIR INFRASTRUCTURAL FACILITIES, TECHNICAL COMPETANCE AND FINANCIAL STANDING.

# INDIGENISATION PROCESS

## OPENING OF TECH BID, COMM BID & ISSUE OF DEVELOPMENT/SUPPLY ORDER

**OPENING OF TECHNICAL BIDS** BY TENDER OPENING COMMITTEE (TOC)

**TECHNICAL EVALUATION** OF BIDS BY TECHNICAL EVALUATION COMMITTEE(TEC)

**OPENING OF COMMERCIAL BIDS** OF VENDORS RECOMMENDED BY THE TEC AND APPROVED BY CFA.

PREPARATION OF **COMPARATIVE STATEMENT OF TENDERS(CST)**

# INDIGENISATION PROCESS

## OPENING OF TECH BID, COMM BID & ISSUE OF DEVELOPMENT/SUPPLY ORDER

**DETERMINATION OF L1 VENDOR (LOWEST BIDDER) BASED ON QUOTED COST OF DEVELOPEMENT PLUS PROTOTYPE COST PLUS COST OF INITIAL ORDER QUANTITY AND OTHER MISCELLANEOUS CHARGES (EXCEPT TAXES) AS APPLICABLE**

**COMMERCIAL NEGOTIATION WITH LOWEST BIDDER**

**EXPENDITURE ANGLE SANCTION (EAS) FROM CFA AND VETTING OF SUPPLY ORDER**

**ISSUE OF SUPPLY ORDER TO L1 VENDOR**

# INDIGENISATION PROCESS

## AWARDING OF LOCAL CERTIFICATION AND BILLING

❑ AFTER AWARDING OF LC, THE FIRM IS TO SUBMIT FOLLOWING DOCS FOR FINAL BILLING:

- 2 COPIES OF **BILL WITH GST NUMBER**
- PHOTOCOPY OF **PAN CARD**
- **PROPRIETARY CERTIFICATE**
- **WARRANTY CERTIFICATE**
- **NEFT MANDATE FORM**
- MATERIAL CERTIFICATE
- ENGG DRAWING AND SPECIFICATION
- CERTIFICATES OF VARIOUS TESTS CARRIED OUT

# INDIGENISATION PROCESS

## AWARDING OF LOCAL CERTIFICATION AND BILLING

❑ ON SUCCESSFUL COMPLETION AND FT OF PROJECT , **LOCAL CERTIFICATION** WILL BE GIVEN BY SELF RELIANCE COMMITTEE IN THE DEPOT . **LC NO : 4BRD/LC/2134**

❑ ONCE LC IS AWARDED, IT IS **VALID FOR THREE YEARS** AND THE FIRM IS EXPECTED TO PROVIDE **SUPPORT FOR NEXT TEN YEARS.**

# WAY AHEAD

- **HUGE OPPORTUNITIES**
- **PROACTIVE APPROACH BY DPSU/INDUSTRY**
- **MAINTENANCE, REPAIR & OVERHAUL**
- **LTMA/LTRA**
- **SKILL ENHANCEMENT**
- **TECHNOLOGY ASSIMILATION**

# CONCLUSION

*“COMING TOGETHER IS A BEGINNING,  
STAYING TOGETHER IS A PROGRESS,  
AND WORKING TOGETHER IS SUCCESS.”*

*- HENRY FORD*



*JAI HIND*

