

UNLOCKING POTENTIAL...



ALPHA DESIGN  
TECHNOLOGIES PVT. LTD.

- ❖ Incorporated during 2003.
- ❖ Industrial Licenses DIL-1 (2007) and DIL-97 (2008) from Government of India for Development, Manufacture & Maintenance / Repairs of all types of Defence Electronics, Avionics, UAV and other equipment & systems.
- ❖ Prominent player in Space Electronics Segment (both Satellite and Ground Satellite Receiving Stations).
- ❖ From Rs. 25000.00 (US \$ 385.00) Sales Turnover in 2004-05, Sales has crossed Rs. 400.00 Cr (US \$ 61.53 Mn) during 2015-16.
- ❖ Considered as one of the fastest growing Defence Electronics, Avionics and Space Electronics development and manufacturing Organisation in Private Sector.



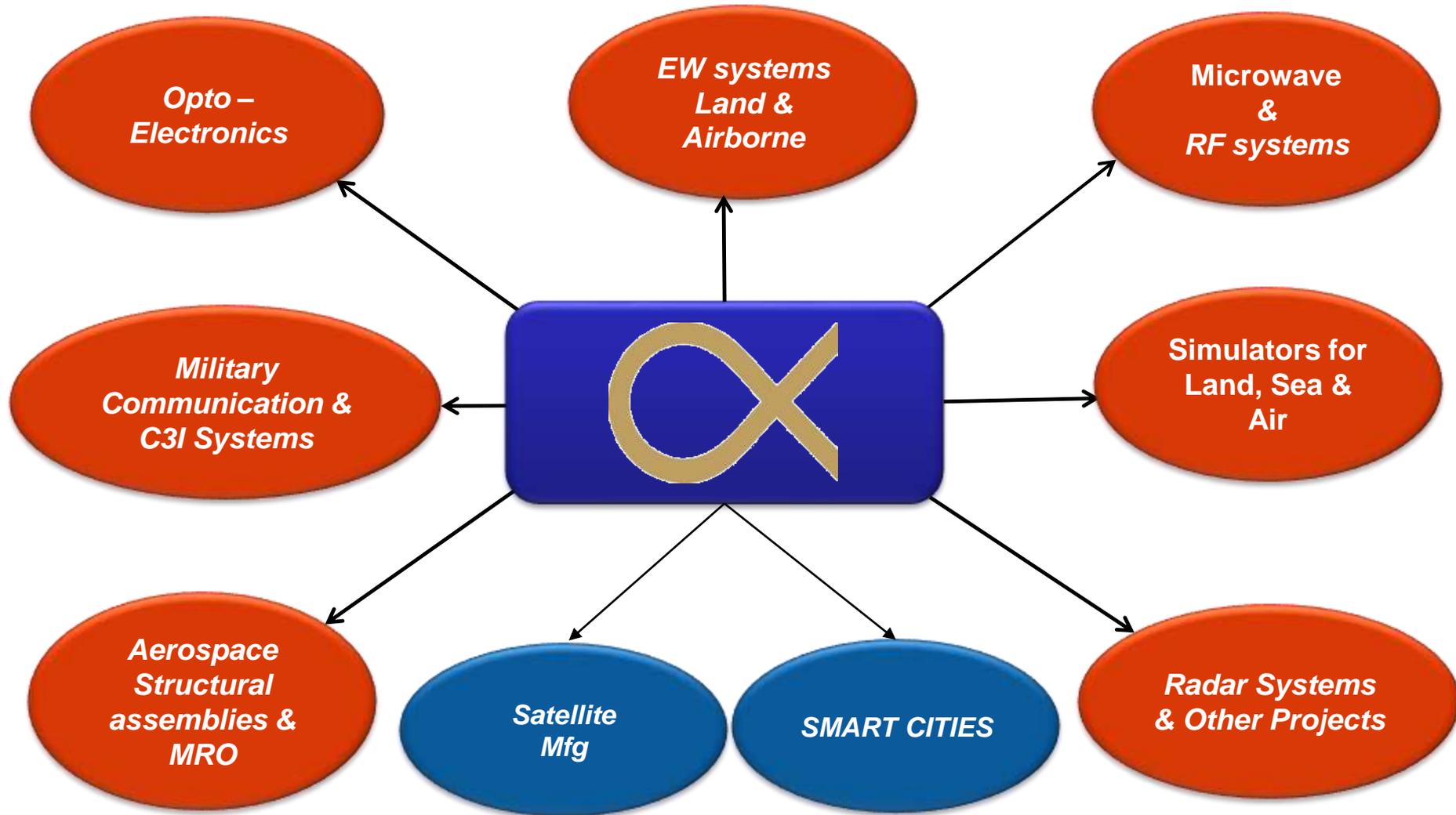


**DEVENAHALLI  
(AEROSPACE SEZ)**



**WHITEFIELD**





## Joint Ventures

*Alpha- Elsec (Elbit  
Sec Sys) Defence &  
Aerospace Systems  
51 : 49*

*Opto-Electronics*

*Opto-electronics, Tank FCS, UAVs. Other divisions of Elbit (Land, Aerospace, EW (Elisra) will join during Sept- Dec 2018)*

*Alpha-Elettronica  
Defence Systems  
80:20*

*Electronic Warfare*

*Solid State Trans Rx Unit for Self Protection Jammer for MiG 29 Upg.*

## Subsidiaries

*Alpha-TOCOL  
Engineering  
Services  
81:19*

*Aerospace  
structures*

*For Su 30 : Flapperon, Rudder, Wing Pylons, Under Carriage Doors, Titanium Engine Frames .*

*For LCA : Rear Fuselage , 10 types of Under wing Pylons, etc...  
Jigs, Fixtures, Assemblies, Parts for Various Hptr platforms*

*Microwave &  
Optronics Systems  
90:10*

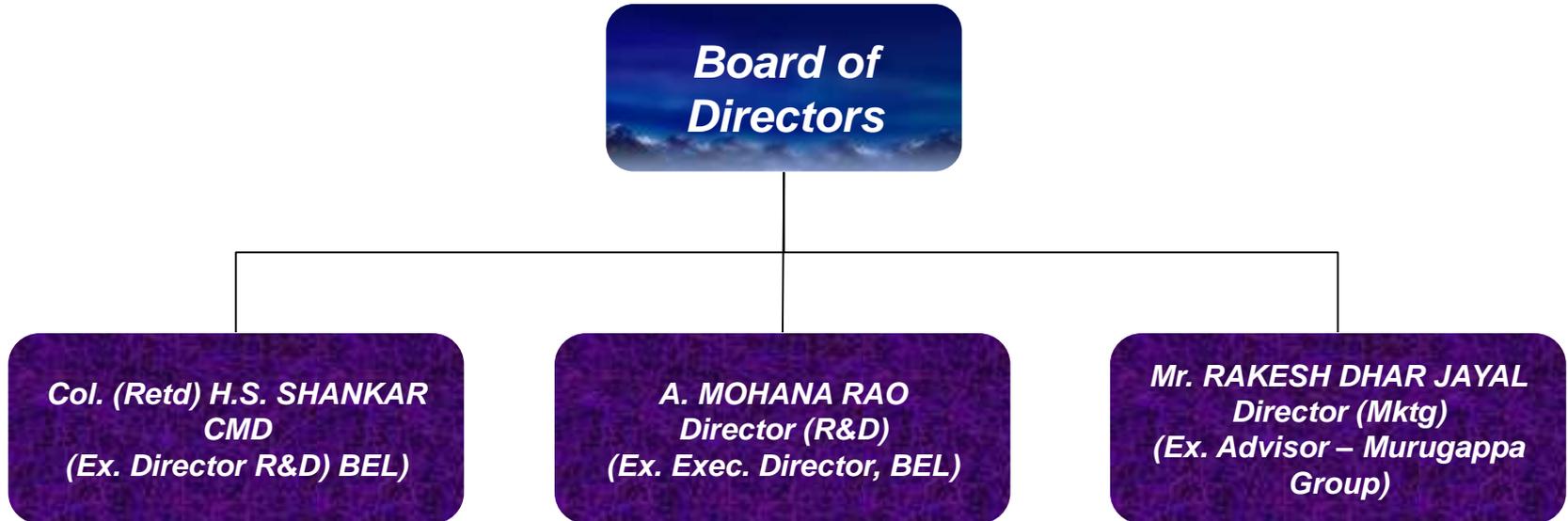
*Microwave Systems*

*Various types of Microwave sub systems*

*Reline Thermal  
Imaging and  
Software  
90:10*

*Software  
Development, C<sup>3</sup>I &  
Simulation*

*Development of Software packages for R&D projects*



**Col. (Retd) H.S. SHANKAR**  
Chairman & Managing  
Director

Mr. Rakesh Dhar Jayal  
Director

Mr. A. Mohana Rao  
Director

Mr. C.M. Basappa  
Sr. Vice President  
(Production)

Mr. R. Ramachandra  
Murthy  
Sr. Vice President (QA)

Capt. (Retd) T.N. Pranasha  
Sr. Vice President  
(C<sup>3</sup>I Systems)

Brig. (Retd) V.K.  
Janakiraman  
Sr. Vice President  
(Hyd Division)

Mr. D. Krishnagopal  
Vice President  
(Systems)

Mr. P.V. Balasubramanyam  
Vice President  
(Corp. PIng & Offsets)

Col. (Retd) E.K.  
Sudhakaran  
General Manager  
(Electro-Optics)

Mrs. Sukeerthi D  
General Manager  
(Finance)

**Total 1010 Personnel -**

*26 senior experts, 45 Managers, 650 young engineers,  
238 technicians, 51 administrative staff.*

*Accreditations*  
&  
*Licenses*

## AS9100C and ISO 9001: 2008 certified company by BVQI



### Certificate of Approval

This is to certify that the Quality Management System of:

**ALPHA DESIGN TECHNOLOGIES PVT. LTD.**  
No.09, INTERFACE ACCOLADE BUILDING, SERVICE ROAD, HAL 2nd STAGE,  
INDIRANAGAR, BANGALORE - 560 008, KARNATAKA, INDIA

has been audited in accordance with the requirements of  
EN 9104-001:2013 by Bureau Veritas Certification and conforms to the following  
Quality Management Systems Standards detailed below

---

*Standards*

---

**BS EN ISO 9001:2008  
EN 9100:2009**  
(Technically equivalent to AS9100C)

---

*Scope of certification*

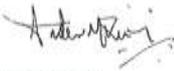
DESIGN, DEVELOPMENT, MANUFACTURE, ASSEMBLY AND TESTING OF SUB-SYSTEMS FOR RADAR, COMMUNICATION AND ELECTRONIC WARFARE FOR AEROSPACE APPLICATIONS, MANUFACTURE, ASSEMBLY AND TESTING OF POPULATED PRINTED CIRCUIT BOARDS, CABLES & WIRE HARNESSSES, LINE REPLACEABLE UNITS AND MECHANICAL HARDWARE AS PER CUSTOMER SPECIFICATION FOR AEROSPACE COMMUNICATION APPLICATIONS.

*Certification Structure: Campus*

Central Function: CORPORATE PLANNING, # 9, INTERFACE ACCOLADE, SERVICE ROAD, HAL II STAGE, INDIRANAGAR, BANGALORE - 560 008, KARNATAKA, INDIA  
Controlling Address: CORPORATE PLANNING, # 9, INTERFACE ACCOLADE, SERVICE ROAD, HAL II STAGE, INDIRANAGAR, BANGALORE - 560 008, KARNATAKA, INDIA

This certificate forms part of the approval identified by certificate number: UK262016-1

Original ISO Approval: 26 MARCH 2010  
Original ASCS Approval: 26 MARCH 2010  
Certificate Issue Date: 26 MARCH 2016  
Certification Expiry Date: 14 SEPTEMBER 2018



**Andrew Kirby**  
Authorised Signatory

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.  
Certification Body: Bureau Veritas Certification Holding SAS-UK Branch  
5<sup>th</sup> Floor, 68 Prescott Street, London, E1 8HG, United Kingdom.




Page 1 of 2



### Certification Awarded to

**ALPHA DESIGN TECHNOLOGIES PVT. LTD.**  
No.09, INTERFACE ACCOLADE BUILDING, SERVICE ROAD, HAL 2nd STAGE,  
INDIRANAGAR, BANGALORE - 560 008, KARNATAKA, INDIA

Bureau Veritas Certification have issued this appendix to the Certificate of Approval awarded to the above named supplier

Certificate Number: UK262016-1

---

*Standards*

---

**BS EN ISO 9001:2008  
EN 9100:2009**  
(Technically equivalent to AS9100C)

---

**CENTRAL FUNCTION / SITE 1:**  
No.09, INTERFACE ACCOLADE BUILDING, SERVICE ROAD, HAL 2nd STAGE, INDIRANAGAR, BANGALORE - 560 008, KARNATAKA, INDIA

**SCOPE**  
DESIGN, DEVELOPMENT, MANUFACTURE, ASSEMBLY AND TESTING OF SUB-SYSTEMS FOR RADAR, COMMUNICATION AND ELECTRONIC WARFARE FOR AEROSPACE APPLICATIONS, MANUFACTURE, ASSEMBLY AND TESTING OF POPULATED PRINTED CIRCUIT BOARDS, CABLES & WIRE HARNESSSES, LINE REPLACEABLE UNITS AND MECHANICAL HARDWARE AS PER CUSTOMER SPECIFICATION FOR AEROSPACE COMMUNICATION APPLICATIONS.

**SITE 2:**  
PEENYA INDUSTRIAL AREA, 193 A, 4TH CROSS, 1ST STAGE, BANGALORE - 560 056, KARNATAKA, INDIA

**SCOPE**  
MECHANICAL AND ELECTRONIC ASSEMBLY.

Page 2 of 2



एन एस आई सी  
**NSIC**  
ISO 9001 : 2008

**राष्ट्रीय लघु उद्योग निगम लिमिटेड**  
**THE NATIONAL SMALL INDUSTRIES CORPORATION LIMITED**

(A Government of India Enterprise)

Sr. No. **32022** S.No. BAN-000866

Branch Office **NO.25,1ST MAIN ROAD,KSSIDC INDUSTRIAL ESTATE,6TH BLOCK,RAJAJINAGAR**  
Ph : 080-23109059 Fax : 080-23386578  
Email : boban@nsic.co.in Website : www.nsic.co.in

**GOVERNMENT PURCHASE ENLISTMENT CERTIFICATE**

Renewal Certificate (Valid From 23/05/2016 to 22/05/2018)  
Ref.No NSIC/GP/BAN/2014/28421 / 28249 Date: 24/05/2016

**M/s. Alpha Design Technologies Pvt Ltd**  
No.9, Service Road, HAL 2nd Stage, Indiranagar  
BANGALORE,  
KARNATAKA- 560008

**Factory Address:**  
1, No.9, Service Road, HAL 2nd Stage,  
Indiranagar  
BANGALORE, KARNATAKA -560008

**Name of the Directors**  
1.Col. (Retd.) H.S. Shankar  
2.A.Mohana Rao  
3.Raksh Dhar Jayal

Certificate of Registration under Single Point Registration Scheme. Units registered under this scheme are considered to be at par with those registered directly with DGS & D.

**Constitution of the firm- Private Limited**  
**GOVERNMENT PURCHASE REGISTRATION NO: NSIC/GP/BAN/2014/0004496**  
**Monetary Limit: ₹ 19957 lakhs ( ₹ Nineteen Thousand Nine Hundred Fifty Seven Lakh Only)**

**TURNOVER (Rupees in Lakhs)**

Financial Year	Annual Turnover
2013-14	8958.91
2014-15	19225.2
2015-16	39912.8
<b>Monetary Limit</b>	<b>19957</b>

**CONSTITUTION CODE : 2**  
**CATEGORY CODE : 3**

Your name has been registered as a SSI Unit eligible for participation in the Central Government Store Purchase Programme as per the Single Point Registration Scheme for the following Item(s)/Store (s)/Service(s).

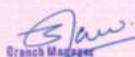
Name of the Store(s)/ Services)	Specification(s)	Qualitative Capacity	Quantitative Capacity P.M.P.S.
"As per List Attached" (25 Item only )			

M/s. Alpha Design Technologies Pvt Ltd

**NSIC**

Authentic certificate can be checked through the web portal: [www.nsicsonline.com](http://www.nsicsonline.com)

CIN : U74140DL1955001002481



Branch Manager  
Authorised Signatory

Conditions overleaf.



**सेना उड़नयोग्यता और प्रमाणीकरण केंद्र**  
**CENTRE FOR MILITARY AIRWORTHINESS & CERTIFICATION**

रक्षा अनुसंधान तथा विकास संगठन  
DEFENCE R&D ORGANISATION  
भारत सरकार, रक्षा मंत्रालय  
GOVERNMENT OF INDIA  
MINISTRY OF DEFENCE  
मारथहाली कॉलोनी पोस्ट ऑफिस, बंगलूर  
MARATHAHALLI COLONY P.O.,  
BENGALURU - 560 037.

**DESIGN APPROVAL No. - 133**

**Name of the Firm: M/s. Alpha Design Technologies Pvt. Ltd.,  
Bengaluru-560 008**

This is to certify that M/s. Alpha Design Technologies Private Limited, 99, Service Road, H.A.L. II Stage, Indira Nagar, Bengaluru-560 008 hereby issued with Design Approval to undertake design and development in the following area of activities:  
"Design & Development of Mission Avionics and Communication Systems for Military Airborne applications"

2. The approval is subject to the following conditions:

- i. The design approval implies that M/s. Alpha Design Technologies Private Limited, Bengaluru-560 008, is capable of undertaking the above mentioned scope of activities within the firm. However, necessary provisional clearance is to be obtained from the concerned RCMA depending on the aircraft systems or Type Approval from CEMILAC, for such products designed and developed on a case to case basis, for its use.
- ii. The scope of approval is applicable only to those activities indicated in Para-1 above only.
- iii. The approval is valid for a period of Two (2) years from the date of issue of this letter, unless otherwise suspended, revoked or cancelled.
- iv. Prior approval of CEMILAC is required to effect any changes in the composition and / or the area of approval from list of authorized signatories.
- v. A brief write up on design activities undertaken & its status under the scope of the approval for Military aircraft and its systems has to be forwarded to CEMILAC at every six months interval mandatorily for subsequent renewals if any.
- vi. Authorized signatories listed in Appendix 'A' will sign the reports on the areas of work defined and these reports with their signatures only will be accepted by CEMILAC/RCMA.
- vii. The newly developed /fabricated items are Subjected to meeting the Quality Assurance aspects & declared performance requirements, being cleared by DGAQM/competent inspection authority for ensuring drawing conformance, quality aspects etc.,

Encl : Appendix 'A'  
Ref No : CEMILAC/6042/DA-133/TC&S  
Dated : 12 July 2012



(Dr. K. JAMILMANI)  
Distinguished Scientist  
Chief Executive (Airworthiness)

By Speed Post

Government of India  
Ministry of Commerce & Industry  
Department of Industrial Policy & Promotion  
Secretariat for Industrial Assistance  
( PAR - II SECTION )

No. IIL/1(2007) New Delhi, the March 3, 2007

M/s. ALPHA DESIGN TECHNOLOGIES PVT. LTD.  
C9, SERVICE ROAD,  
EAS II STAGE,  
INDHANAGAR,  
BANGALORE - 560038.

Sub. :- Your application for the grant of an Industrial License under the ILE Act, 1981 for the manufacture of RADAR SYSTEM, PARTS AND ACCESSORIES VIZ. RADAR SYSTEMS AND PARTS VIZ. GROUND BASED, AIR BORNE AND NAVAL RADARS, THEIR UPGRADES AND THEIR COMPONENTS / SUB-SYSTEMS ETC. falling under Schemelized Industry No. 37.

Ref. :- Your application S. No. 23(2006)-II dated 20-3-2006.

Gentlemen,

Application S.No. 23(2006)-II dated 20-3-2006 for a license having been received under Rule 7 of the Registration and Licensing of Industrial Undertaking Rules 1952 from M/s ALPHA DESIGN TECHNOLOGIES PVT. LTD. for effecting substantial expansion in your industrial undertaking for the manufacture of RADAR SYSTEM, PARTS AND ACCESSORIES VIZ. RADAR SYSTEMS AND PARTS VIZ. GROUND BASED, AIR BORNE AND NAVAL RADARS, THEIR UPGRADES AND THEIR COMPONENTS / SUB-SYSTEMS ETC. the Central Government in exercise of the powers conferred on them by Rule 15(1) of the said Rules hereby grants this licence to M/s ALPHA DESIGN TECHNOLOGIES PVT. LTD. in relaxation of the locational policy of the Govt., subject to the following conditions.

2. The substantial expansion shall have the installed capacity as specified below on the basis of maximum utilization of capacity of plant and machinery.

Items of manufacture	Annual Capacity
1. RADAR SYSTEMS, PARTS AND ACCESSORIES VIZ. RADAR SYSTEMS AND PARTS VIZ. GROUND BASED, AIR BORNE AND NAVAL RADARS, THEIR UPGRADES AND THEIR COMPONENTS / SUB-SYSTEMS	Additional: 20 SYSTEMS ( THIRTY FIVE SYSTEMS ) Existing : 15 SYSTEMS ( SIXTEEN SYSTEMS ) Annual Capacity after expansion : 35 SYSTEMS ( FIFTY SYSTEMS )
2. OPTICAL GOODS AND EQUIPMENT VIZ. OPTICAL AND OPTO-ELECTRONIC EQUIPMENT AND COMPONENTS SUCH AS DAY/NIGHT FISHION BINOCULARS AND GOGGLES, RIFLE SIGHTS, REFLEX SIGHTS, THERMAL IMAGING SYSTEMS, COMPONENTS, PARTS, ASSEMBLIES & SUB-SYSTEMS FOR THE ARMY	Additional: 10000 NUMBERS ( TEN THOUSAND NUMBERS ) Existing : 10000 NUMBERS ( TEN THOUSAND NUMBERS ) Annual Capacity after expansion : 20000 NUMBERS ( TWENTY THOUSAND NUMBERS )

Contd....P/3



- 2 -

3. NAVIGATIONAL INSTRUMENTS VIZ. LASER RANGE FINDER, AIRBORNE, SHIPBORNE AND LAND NAVIGATIONAL SYSTEMS

Additional: 2000 NUMBERS  
( TWO THOUSAND FIVE HUNDRED NUMBERS )  
Existing : 1000 NUMBERS  
( ONE THOUSAND TWO HUNDRED NUMBERS )

Annual Capacity after expansion : 3000 NUMBERS  
( THREE THOUSAND SEVEN HUNDRED NUMBERS )

4. COMPUTERS AND COMPUTER BASED SYSTEMS AND PARTS THEREOF VIZ. SIMULATORS, PARTS AND ACCESSORIES FOR VARIOUS SIMULATORS

Additional: 20 SYSTEMS  
( TWENTY SYSTEMS )  
Existing : 10 SYSTEMS  
( TEN SYSTEMS )

Annual Capacity after expansion : 30 SYSTEMS  
( THIRTY SYSTEMS )

5. TRANSMISSION APPARATUS FOR RADIO TELEPHONY & RADIO TELEGRAPHY VIZ. TACTICAL COMMUNICATION SYSTEMS, UNIVERSAL (DIGITAL) CONTROL BUSINESS FOR COMMUNICATION EQUIPMENT, HF/VHF/UHF & MICROWAVE COMMUNICATION EQUIPMENT/SYSTEMS, AIRBORNE/GROUND/SHIP BASED ELECTRONIC WARFARE EQUIPMENT, C<sup>3</sup>I, C<sup>4</sup>I SYSTEMS

Additional: 1000 NUMBERS  
( TWO THOUSAND FIVE HUNDRED NUMBERS )  
Existing : 1623 NUMBERS  
( ONE THOUSAND SIX HUNDRED & FIFTY FIVE NUMBERS )

Annual Capacity after expansion : 4123 NUMBERS  
( FOUR THOUSAND ONE HUNDRED FIFTY FIVE NUMBERS )

6. REPAIR AND MAINTENANCE OF COMPUTERS AND COMPUTERS BASED SYSTEMS VIZ. REPAIR AND MAINTENANCE OF SIMULATORS INCLUDING INSTALLATION AND COMMISSIONING OF THE SYSTEMS, ANNUAL MAINTENANCE CONTRACTS FOR SIMULATORS

Additional: 100 NUMBERS  
( ONE HUNDRED NUMBERS )  
Existing : 10 NUMBERS  
( TEN NUMBERS )

Annual Capacity after expansion : 110 NUMBERS  
( ONE HUNDRED TEN NUMBERS )

7. REPAIR OF RADAR APPARATUS VIZ. PROVIDING WARRANTY SUPPORT AND CARRYING OUT REPAIRS OF AIRBORNE, SHIPBORNE AND GROUND BASED RADAR EQUIPMENT WHICH SHALL INCLUDE INSTALLATION AND COMMISSIONING SUPPORT ALSO, ANNUAL MAINTENANCE CONTRACTS FOR VARIOUS RADAR APPARATUS

Additional: 100 NUMBERS  
( ONE HUNDRED NUMBERS )  
Existing : 20 NUMBERS  
( THIRTY NUMBERS )

Annual Capacity after expansion : 120 NUMBERS  
( ONE HUNDRED THIRTY NUMBERS )



Contd....P/3

- 1 -

6. REPAIR AND MAINTENANCE OF COMPUTERS AND COMPUTER BASED SYSTEMS VIZ. REPAIR AND MAINTENANCE OF SIMULATORS INCLUDING INSTALLATION AND COMMISSIONING OF THE SYSTEMS, ANNUAL MAINTENANCE CONTRACTS FOR SIMULATORS

7. REPAIR OF RADAR APPARATUS VIZ. PROVIDING WARRANTY SUPPORT AND CARRYING OUT REPAIRS OF AIRBORNE, SHIPBORNE AND GROUND BASED RADAR EQUIPMENT WHICH SHALL INCLUDE INSTALLATION AND COMMISSIONING SUPPORT ALSO, ANNUAL MAINTENANCE CONTRACTS FOR VARIOUS RADAR APPARATUS

8. Your attention is invited to Rule 7 of the Registration and Licensing of Industrial Undertaking Rules 1952. In accordance with this rule, you should furnish returns in Form 'G' (reproduced in Annexure II) setting the progress of implementation of the license for each half year ending on 31st December and 30th June until commercial production from the project is established. The return should be furnished in duplicate to Joint Director (Statistics), Deptt. of Industrial Policy & Promotion, Udyog Bhavan, New Delhi - 110011; Deputy Director (SIA), Department of Industrial Policy and Promotion, Room No. 400-B, Udyog Bhavan New Delhi - 110011; to the Ministry/Department of DEFENCE PRODUCTION, New Delhi, and to the Director of Industries and Secretary, Industries of the State in which the factory of the undertaking is located. The return should be furnished within one month of expiry of the half-yearly period to which it relates.

9. The commencement of commercial production should also be notified to the authorities specified in paragraph 8 above in the form given in Annexure III.

10. This Industrial License will be valid only for a period of two years within which commercial production is to be established. If an extension to this period is found necessary, you may apply to the Ministry / Deptt. of DEFENCE PRODUCTION, New Delhi, with full justification giving the circumstances under which and the period for which the extension is sought.

11. You are requested to confirm acceptance of the above conditions and to take effective and expeditious action in respect of your investment proposal. You may contact the Entrepreneurial Assistance Unit of the Secretariat for Industrial Assistance, Udyog Bhavan, New Delhi-110 011, for any further clarification or assistance you may need.

Yours faithfully,

*(Signature)*  
R.C. SHARMA

Under Secretary to the Govt. of India.



By Speed Post

Government of India  
Ministry of Commerce & Industry  
Department of Industrial Policy & Promotion  
Secretariat for Industrial Assistance  
( PAB - II SECTION )  
.....

No. IIL : 97(2008) New Delhi,  
the November 29, 2008.

To,  
M/s. ALPHA DESIGN TECHNOLOGIES PVT. LTD.  
NO. 9, SERVICE ROAD,  
HAL-II STAGE,  
INDIRA NAGAR,  
BANGALORE - 560 009  
KARNATAKA

Sub. :- Your application for the grant of an Industrial Licence under the IDA Act, 1951 for the manufacture of UNMANNED AERIAL VEHICLES (UAVs) OF VARIOUS TYPES INCLUDING MINI, MICRO UAVS AND GROUND SUPPORT SYSTEMS falling under Scheduled Industry No. 37.

Ref. :- Your application S. No. 59(2007)-IL dated 28-3-2007.

Sentlemen,

Application S.No. 59(2007)-IL dated 28-3-2007 for a Licence having been received under Rule 7 of the Registration and Licensing of Industrial Undertaking Rules 1952 from M/s ALPHA DESIGN TECHNOLOGIES PVT. LTD. for the manufacture of UNMANNED AERIAL VEHICLES (UAVs) OF VARIOUS TYPES INCLUDING MINI, MICRO UAVS AND GROUND SUPPORT SYSTEMS as New Article in your existing undertaking, the Central Government in exercise of the powers conferred on them by Rule 15(2) of the said Rules hereby grants this licence to M/s ALPHA DESIGN TECHNOLOGIES PVT. LTD., subject to the following conditions.

2. The manufacture of new article shall have the installed capacity as specified below on the basis of maximum utilization of capacity of plant and machinery.

Items of manufacture	Annual Capacity
UNMANNED AERIAL VEHICLES (UAVs) OF VARIOUS TYPES INCLUDING MINI, MICRO UAVS AND GROUND SUPPORT SYSTEMS	1100 NUMBERS [ ONE THOUSAND ONE HUNDRED NUMBERS ]

3. The manufacture of new article mentioned above shall be undertaken in your existing industrial unit located at NO. 9, INTERFACE ACCOLADE, HAL II STAGE, COOPANAHALLI, District BANGALORE in the state of KARNATAKA.

4. The manufacture of new article shall be completed and commercial production established within a period of two years from the date of issue of this Industrial Licence.



... 2/-



**National Accreditation Board for  
Testing and Calibration Laboratories**  
(A Constituent Board of Quality Council of India)



**CERTIFICATE OF ACCREDITATION**

**ADTL SR&DC TEST LAB**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2005**

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

09, Service Road, Hall 2 Stage Indiranagar, Bengaluru, Karnataka

in the field of

**TESTING**

**Certificate Number** TC-6540

**Issue Date** 15/11/2017

**Valid Until** 14/11/2019

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Signed for and on behalf of NABL

N. Venkateswaran  
Program Director

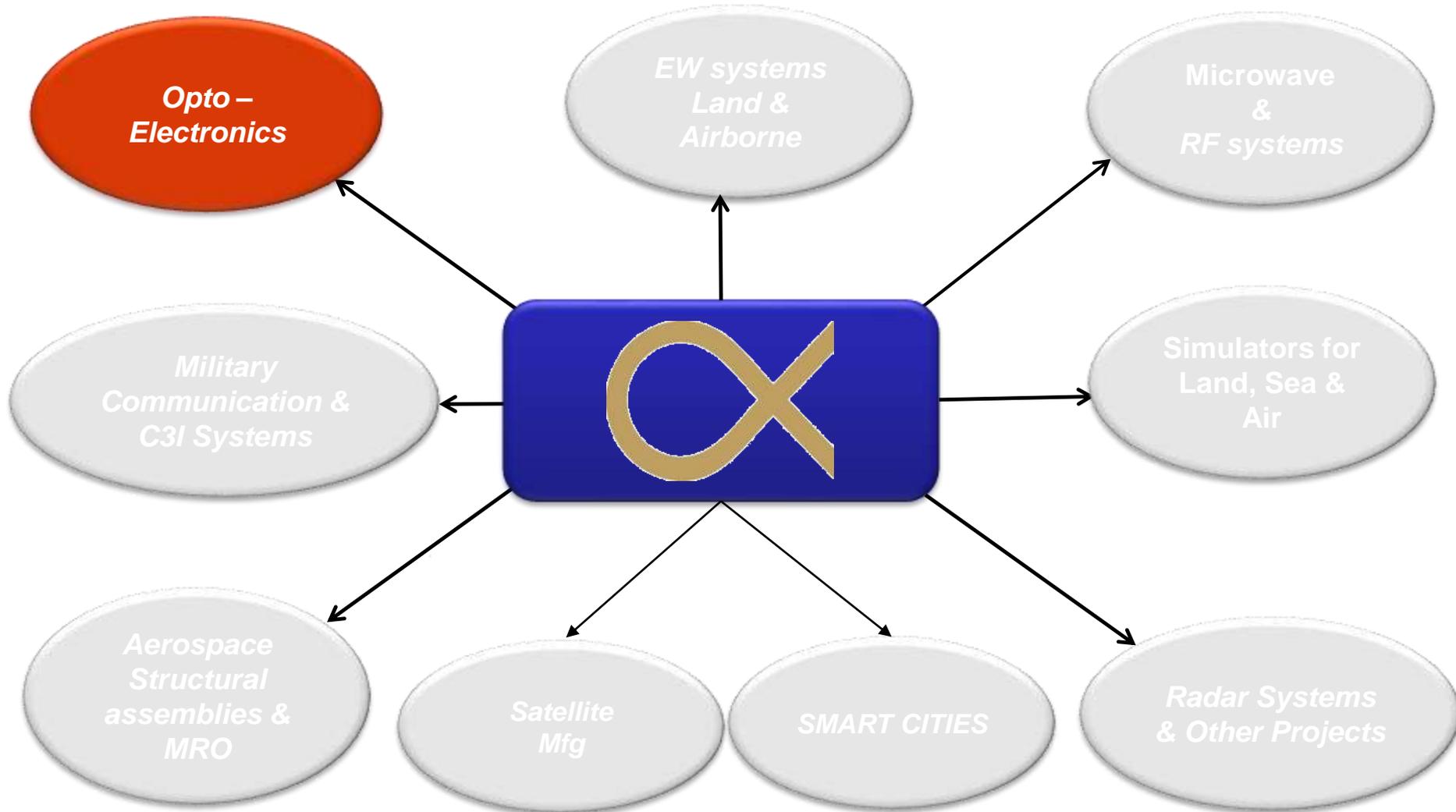


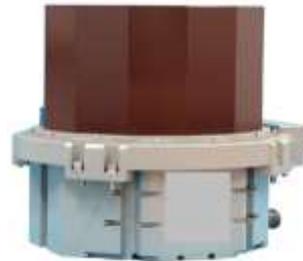
89076970100030000529

Anil Relia  
Chief Executive Officer

<b>Sl No</b>	<b>Year</b>	<b>Sales Turnover</b>	<b>PAT</b>	<b>Remarks</b>
<b>1.</b>	2014 - 15	Rs. 233.16 Cr	Rs. 6.48 Cr	Audited results
<b>2.</b>	2015 - 16	Rs. 418.97 Cr	Rs. 14.71 Cr	
<b>3.</b>	2016 - 17	Rs. 210.36 Cr	Rs. 31.09 Cr	
<b>4.</b>	2017 - 18	Rs 220.00 Cr		Estimated projection

***PROJECTS /  
PROGRAMS FOR  
DEFENCE FORCES***







GRU

EPU

EU



GDU



CDU



Filter Box

**TISK Components**



Ballistic hood



Sensors

**ATGM Sight Components**



System View





**Thermal Imager (TI)**



**Head Mirror Assembly (HMA)**



**Video Conversion Unit (VCU)**



**Power Supply Unit (PSU)**



**Eye safe Laser Range Finder (ELRF)  
& Day channel**





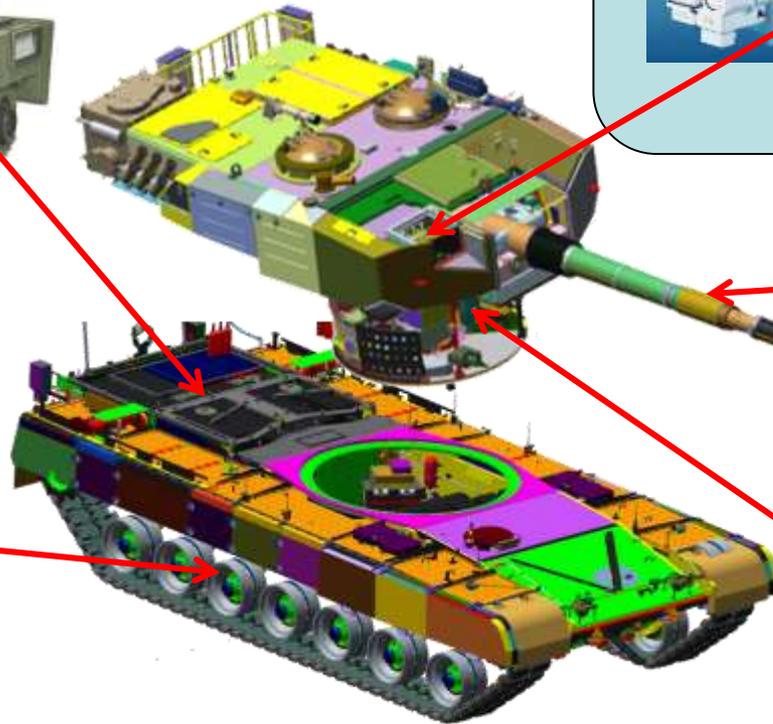


**ADTL**

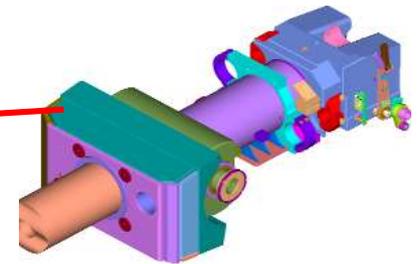
**Powerpack  
- Engine & Transmission**



**Running Gear System  
- Suspension & Track**



**Fire Control System**



**Armament**



**Gun Control System**



## Salient Features

- Night Vision Channel Thermal Imager (TI) based with 3<sup>rd</sup> GEN Detector higher resolution, FPA 320 X 256.
- Day Channel as Existing.
- Key Pad for Control of TI and MMI.
- 5.4" LCD Monitor for DISPLAY OF VIDEO.



**LOROP**



Typical Images



From 80 km slant range



From 37 km slant range



The Multi Spectral Infrared Countermeasure (MUSIC®) system is a high-performance, laser-based directed infrared countermeasure (DIRCM) protection system for aircraft and helicopters against ground to air missiles (MANPADS).

The unit integrates fiber laser technology and a thermal camera with a small, highly dynamic turret to provide effective, reliable and affordable protection under all operational conditions and is adaptable to threat evolution.



## Operational Benefits

- Increased mission safety
- Advanced air-to-air and air-to-ground capabilities, including slaving and targeting of pods and sensors
- Reduced workload and pilot fatigue
- Improved scanning pattern
- Improved joint operations
- No interference with NVG operation or change in NVG flight procedures
- A 'weapon (oriented) system





## Major Features

- ❑ Operational with users worldwide.
- ❑ Fully redundant flight avionics & electronics.
- ❑ Minimal scheduled maintenance.
- ❑ Outstanding safety ,reliability and availability record.
- ❑ Highly mobile and deployable.
- ❑ Class leading payload carrying capabilities.
- ❑ Wide variety of cutting edge payloads:
  - ✓ EO/IR
  - ✓ SAR
  - ✓ ELINT, EW, COMINT, COMJAM
  - ✓ Other

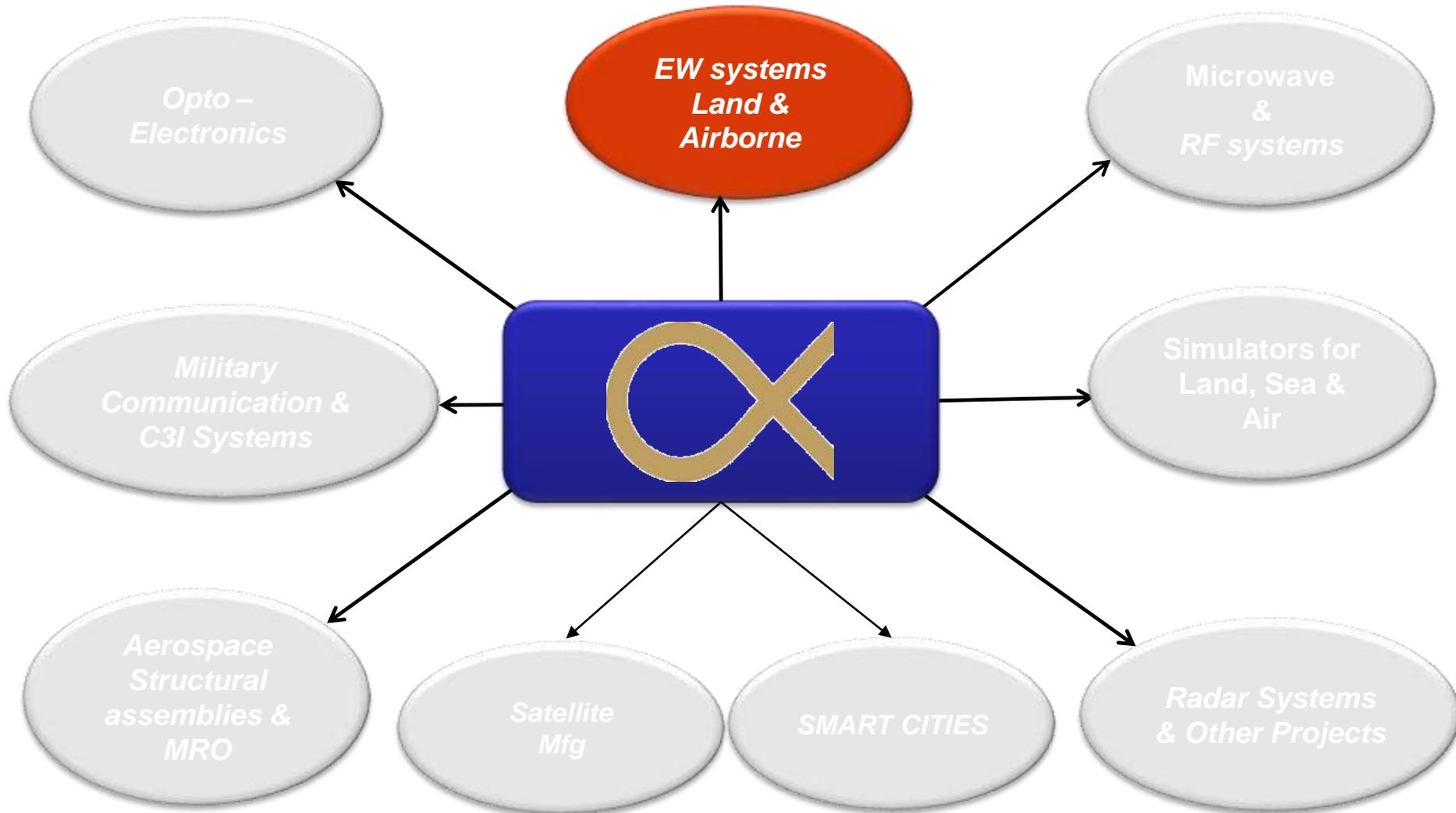
# Hermes 900 UAV



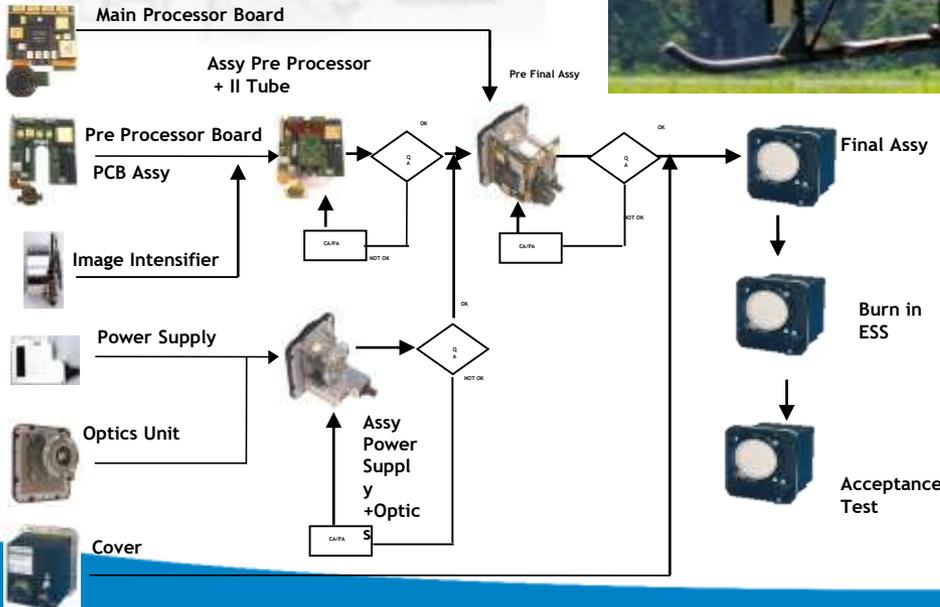
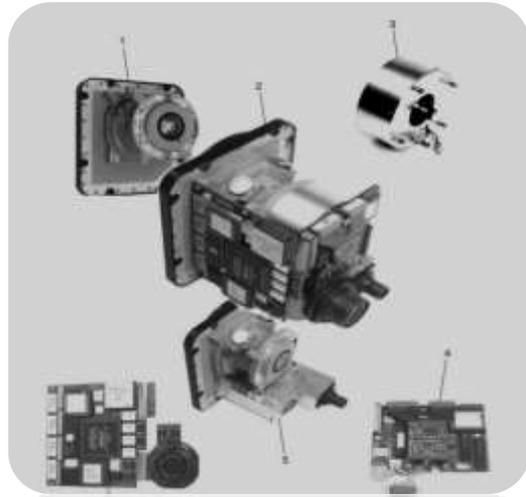
## Major Features

- ❑ Highly autonomous & mission effective
- ❑ Multiple hard points & 250 Kg modular installation bay
- ❑ Satellite Communication & LOS Data Link
- ❑ Adverse weather capabilities
- ❑ Designed for minimal maintenance
- ❑ Wide variety of cutting edge payloads
  - ✓ EO/IR/Laser Designator, Long Range EO/IR
  - ✓ SAR
  - ✓ ELINT, EW, COMINT, COMJAM
  - ✓ Wide Area Surveillance / Mapping
  - ✓ Hyper Spectral
  - ✓ Communication Relay

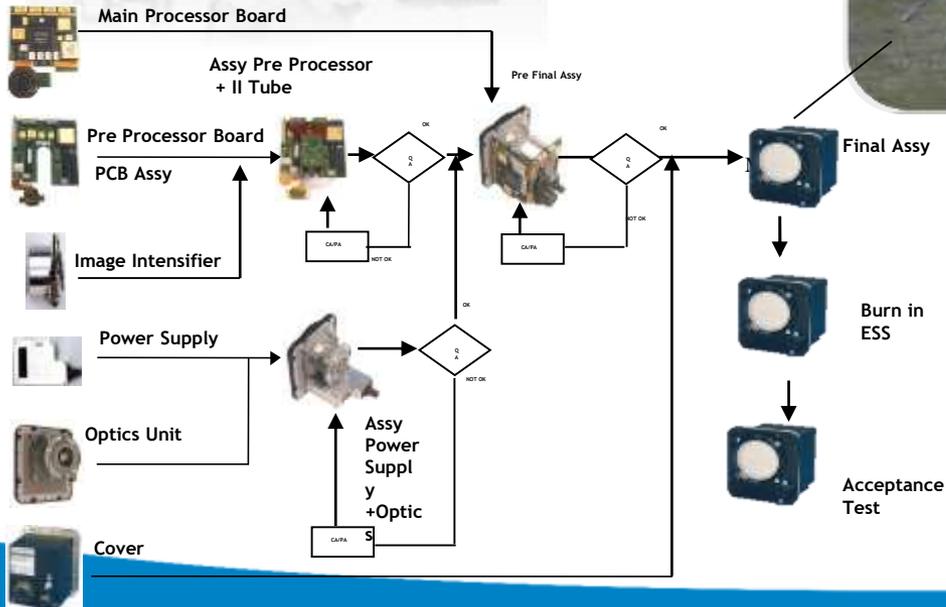
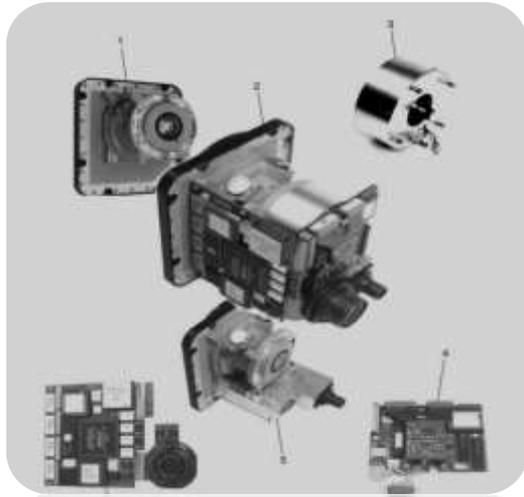




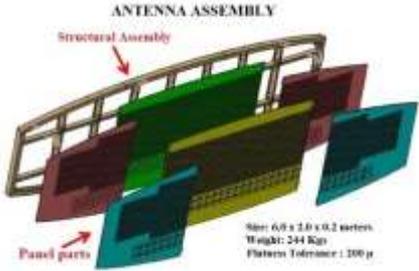
# MILDS for CHEETAH HTPRS



# MILDS for MI-17V5 HTPRS



MILDS Sensors



**MILDS for Indigenous AWACS (DRDO)**



**MILDS Sensors**



**T-R Module**

# MI-17 Medium Lift Helicopters Upgrade Program





## Self-Protection Jammer's Solid State Trans-Receive Unit (SSTRU)



## IFF Projects

**Indigenous Interrogator for Transport & AEWS A.C**



**Indigenous Interrogator for fighter A.C.**



**Indigenous Transponder for Transport & AEWS A.C.**



Air borne transponder

- Mk XA, Mk XII and Mk XIII interrogators in modes 1, 2, 3/A (identification response) and mode C (aircraft altitude response).
- Mode-S interrogation equipment.
- ARINC-429 digital data bus and MIL-STD-1553B high-speed multiplex bus
- Dimensions 3/8 ATR short case

**New version of Indigenous Transponder for Hptrs, fighter A.C.**



Long Range Interrogator

- Mono pulse Technique.
- Mk12 mode S.
- Modes of operation: 1, 2, 3/A and C 4(STANAG 4193 interface), Upgradable to Mode 5. Mode 'S' (All Call)
- Range Accuracy of 150 meters.
- In-Beam Target : 32
- ICAO & STANAG 4193 standard compliant.

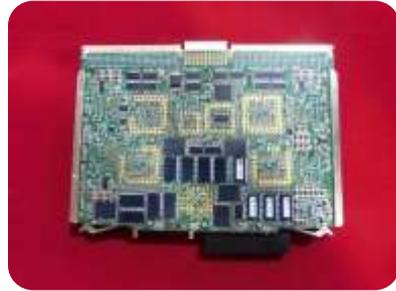


**Indigenous Combined Interrogator & Transponder for various platforms.**

Long Range Combined Interrogator Transponder

- Mono pulse Technique.
- Mk12 mode S.
- Modes of operation: 1, 2, 3/A and C 4(STANAG 4193 interface), Upgradable to Mode 5. Mode 'S' (All Call)
- Range Accuracy of 150 meters.
- ICAO & STANAG 4193 standard compliant.
- Reply : >1200/Min
- Solid State Modular Design

## IFF Project - Sub-Systems



Upgradation of earlier version of IAI - ELTA's SPJ with HB Jammer fitted on fighter A.C.s to be upgraded with LB Jammer.

- Upgrade of existing IAF systems
  - Frequency band extension
  - Improved response capabilities

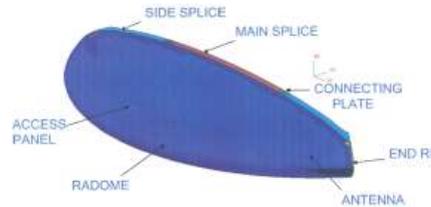


Manufacture of the Radomes for the AWACS 4 & 5: The broad outline of the various processes, equipment and inspection facilities required for the manufacture of the high end Radome for the AWACS project is explained below in pictorial form:

## Radar Radome



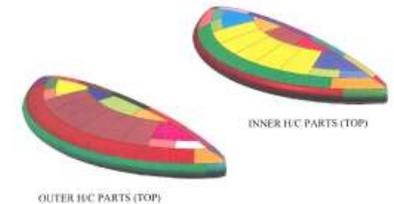
Radome General View



Radomes



Lay-Up Tool



## Specimens Test



Leading edge typical structure

Root specimen



## “Cooking The Radome”



## Radome – In Production



## Autoclave



## Radome – Before Painting



C-Scan Machine



Splice Installation and C-Scan



C-Scan Machine



Splice Installation and C-Scan

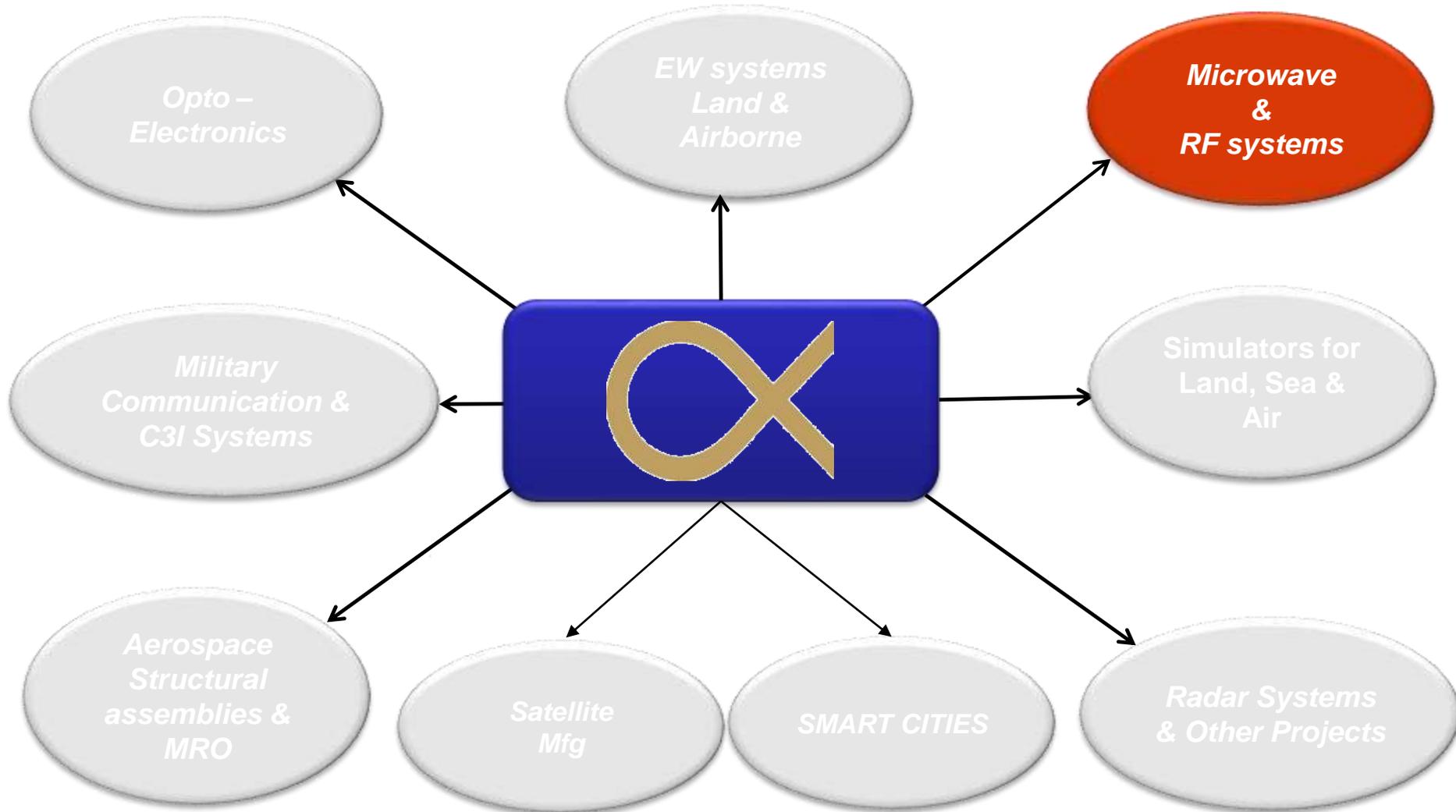


Static Test



Static Test Tool







**FEA-FER (0.5-40 GHz)**



**Miniaturized RF switch matrix (1-18 GHz)**



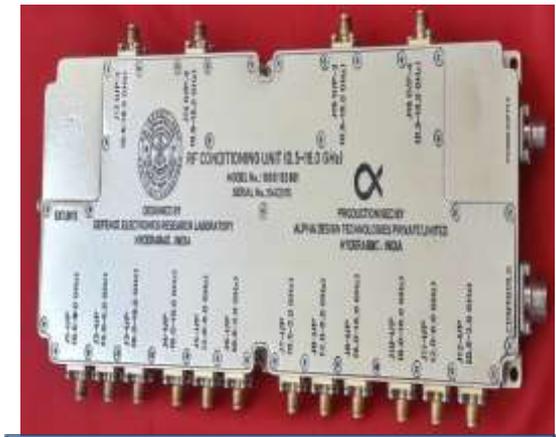
**DIFM ( 2-18 GHz)**



**Synthesized Local Oscillator (10-18GHz)**



**Channelized Receiver (0.5-18 GHz) (Quad Channel)**



**RF unit(0.5-18 GHz)**

**Air Borne EW Sub-Systems**



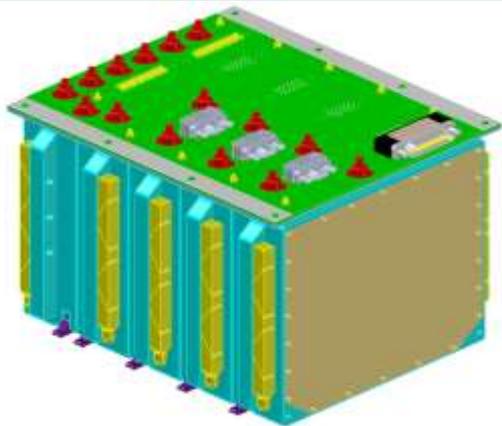
**Microwave Front End  
(1.0-18 GHz)**



**TR multi Module (3.1-3.5 GHz)**



**ESM Receiver (1-18 GHz)**



**Multi Channel Phase  
Coherent Synthesizer  
(5-20 GHz)**



**Sector Selection Unit  
(0.5-18 GHz)**



**Interface Unit VU  
& Microwave**



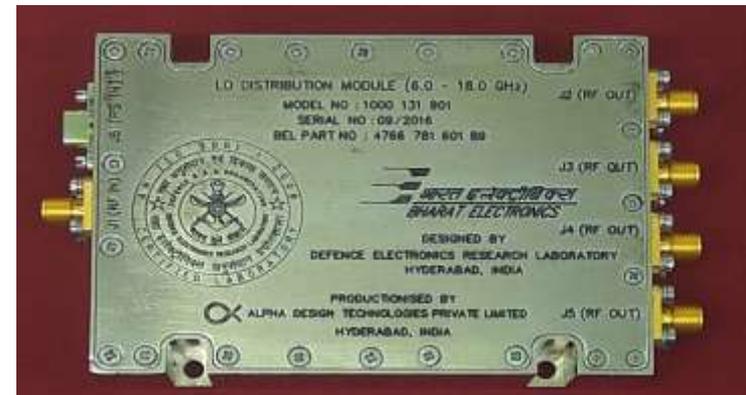
**Channelized Receiver  
(18-40 GHz) (Dual Ch.)**



**RF-BITE Unit (0.5-18 GHz)**



**RF BITE Distribution Unit  
(0.5-18 GHz)**



**LO Distribution Unit (1-18 GHz)**

**Misc. EW Sub-Systems**



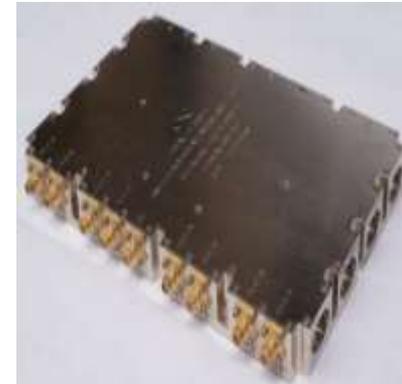
**Tuner Synchronizer  
(0.5-18 GHz)**



**Switch Matrix  
(0.5 -2.0 GHz)**



**Switch Matrix  
(2-6 GHz)**



**Switch Matrix  
(6-18 GHz)**



**Channelized Receiver  
(0.5-18GHz) (Single Ch.)**



**TDF Front End Rx.  
(2-18 GHz)**



**C-Band SSPA (2-18 GHz)**

V/UHF Surveillance Receiver



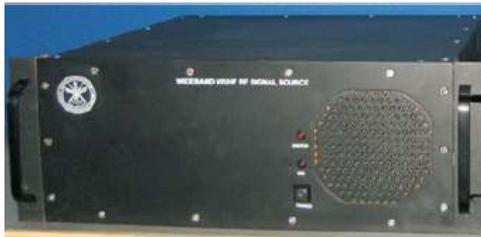
4-Chanel V/UHF RF Front-end



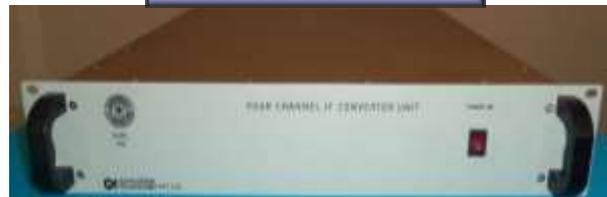
RFU ( Wide Band Receiver)



V/UHF Signal source



4-Channel IF Converter



Synthesizers



Noise Generator



Receiver Interface Boards



- COMINT & Integrated EW
- Search, Monitoring & Signal Analysis
- Land based, Air borne & Ship borne EW
- Wide Freq range (0.1 to 3000 MHz)
- CPCI based architecture
- High Isolation and Dynamic Range
- Controller boards with FPGAs



- Broadband high efficiency power amplifiers in HF, VHF & UHF frequency bands upto 3GHz
- Designs based on GaN HEMTs, GaAs pHEMTs & MOS FETs with power ratings upto 2KW CW
- EMI/RFI filters, machined housings, all qualified components and Alpha ISO9001 Quality Assurance.





**Multi Band Jammers**



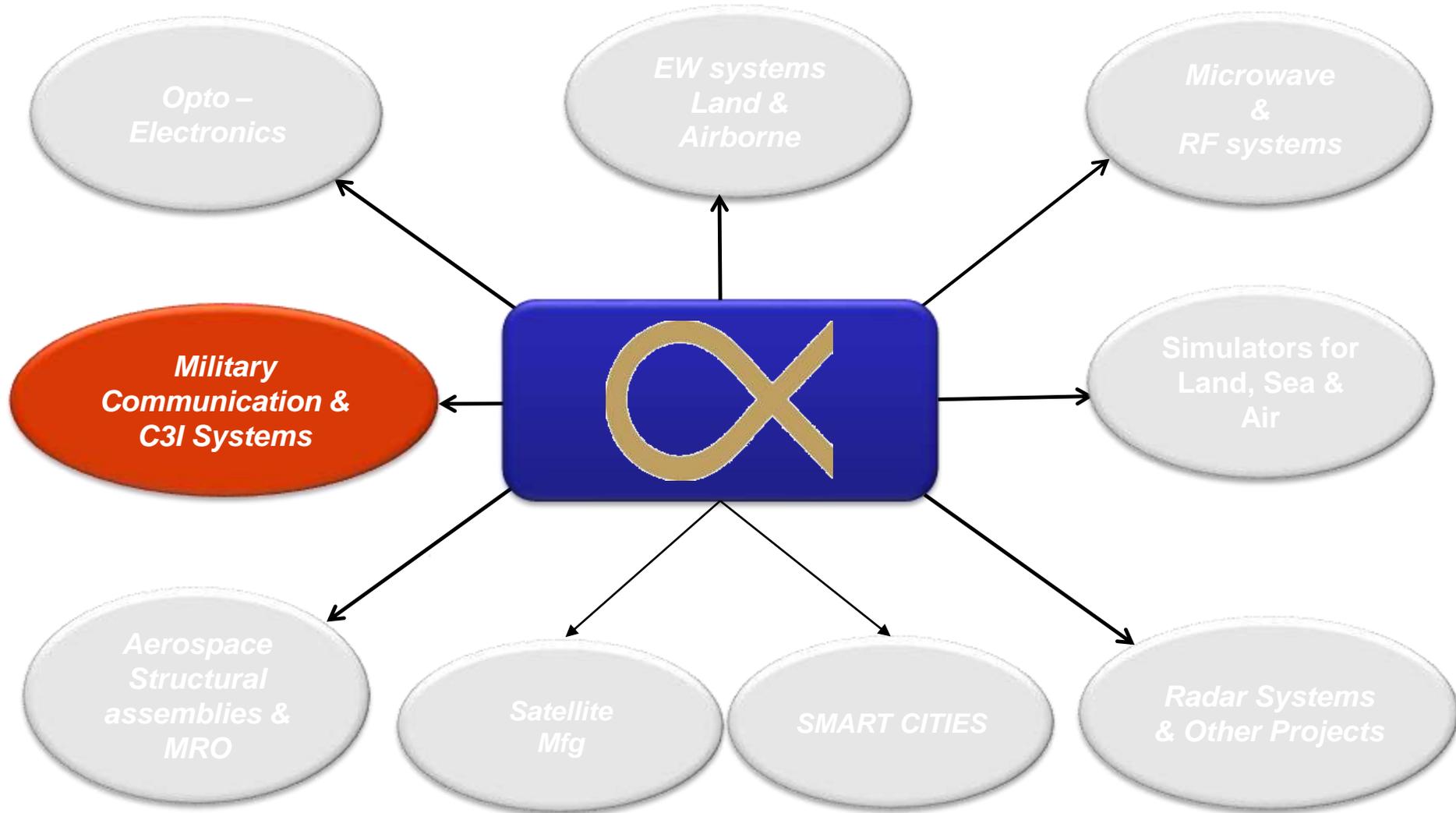
**Broad Band Reactive Jammers**



**VHF CB Systems**

- Intelligent counter RCIED solutions based on advance ECM technologies to ensure absolute protection from all types of RCIEDs.
- Cover HF, VHF, UHF & MW threat bands, user configurable.
- Various versions for meeting versatile operational requirements.
- Designs based on advance DSP technologies for fast response.
- Flexible software configurations for future upgrad





## Software Defined Radios (SDR) Variants



Modem Module with Test Jig



Digital Processing Module with Test Jig



Back Plane PCB with Red & Black Separation



SDR Based S-Band SATCOM Tx Board



SDR Based S-Band SATCOM Rx Board



SDR Based OPSK Tx Board



5 W V/UHF Power Amplifier Board

Tactical Access Switch



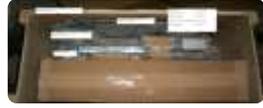
Tadiran Radios CNR 900 M



SDR based 8/34 Mbps  
Radio Relay







ADTL has entered into a Contract with M/s. HBL, Hyderabad for fitment of Digital Control Harness System in BMP Tanks for which HBL-Tadiran has won the Contract from Indian Army/MOD for Qty 6968 Nos., being fitted on all T-90, T-72, BMP, Arjun, Specialist tanks such as, Schilka, Tangushka, etc.



ULSB MK - III based on TDM switching is a state-of-the-art switch board, designed to provide local / trunk communication to a field unit. It terminates local telephones, subscribers (Auto / Magneto / ISDN BRI), Analog Junction i.e. TWT, CO, RD and E&M and Digital Trunk on E1 at Unit and Sub Unit Level.



Supply and integration of 1.8 M & 4.5 M antennas ,RF subsystem up to Base Band, for DCN project.



15 Mobile terminals are distributed across India.

8 nos of 4.5 M antenna are installed in following islands

1. Port Blair, HQ ANC
2. Port Blair, 153 AF
3. Diglipur, NAS Shibpur
4. Kamrota, INS Kardip
5. Campel Bay, INS
6. Car Nicobar, IAF
7. Minicoy, INS
8. Kavarati, INS





## KEY FEATURE

- Light Weight & rugged design
- Fast setup time (15 minutes typical)
- Integrated electronics
- DVB S2 inbound / 2 Mbps outbound.
- 40 Watt RFT
- Man-portable
- Built-in compass & GPS
- IP Voice & Data capability
- Auto / Step Tracking

## 1.2/1.8M Mobile Auto Tracking VSAT

### The Mobile VSAT Antenna comprises

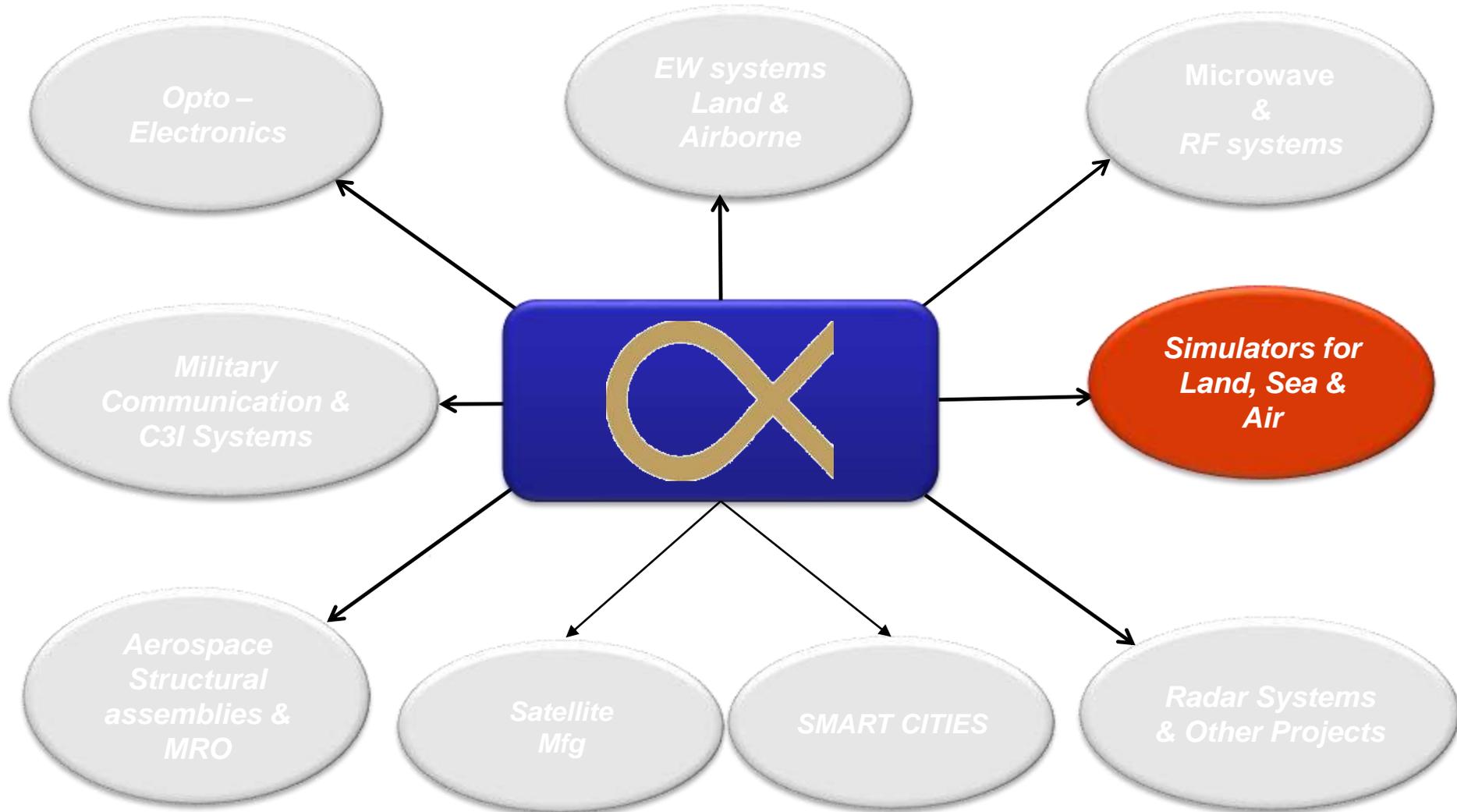
- Carbon reflector of 1.2/1.8 M
- 3 axis mount,
- Antenna Control Unit
- GPS
- Electronic Compass
- Inclinometer,
- Beacon Tracking Receiver
- Encoders

### SPECIFICATION

#### MECHANICAL

Antenna Size	: 1.2 Mtr Prime Focus Offset
Antenna Type	: Carbon Fibre Reflector
Mount Geometry	: Elevation Over Azimuth
Azimuth Travel	: $\pm 180^\circ$
Elevation Travel	: $0^\circ - 160^\circ$ from Sleep mode
Polarization Travel	: $\pm 95^\circ$ for 2 Port
Polarization Travel Rate	: $1.5^\circ / \text{Sec}$







**INSTRUCTOR CONSOLE**



**COMBAT COMPARTMENT MODULE**



**MI-17 Simulator Training Centre**

Qty – 2 Nos



**MIG-29 Simulator Training Centre**

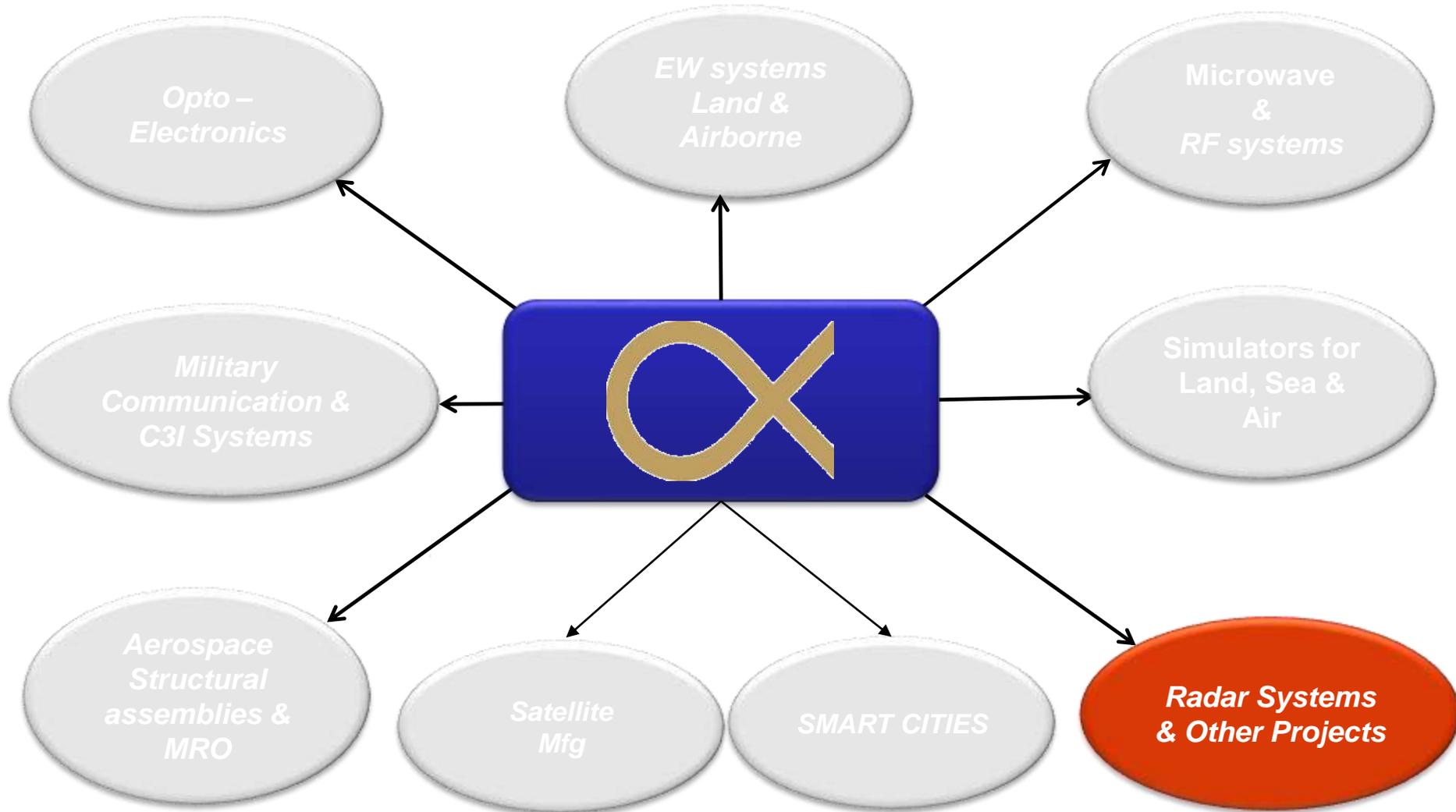
Qty - 01 No



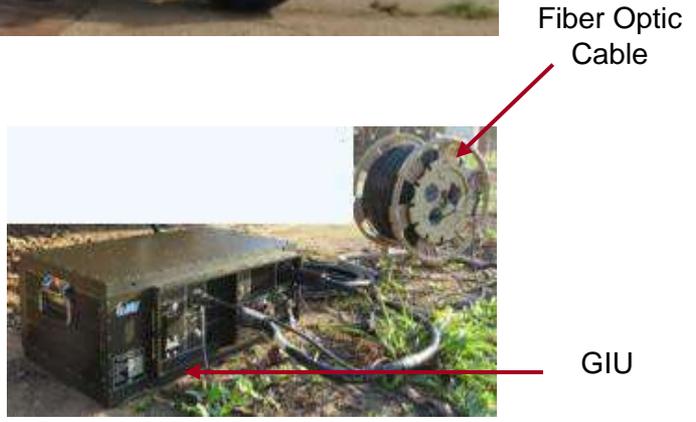
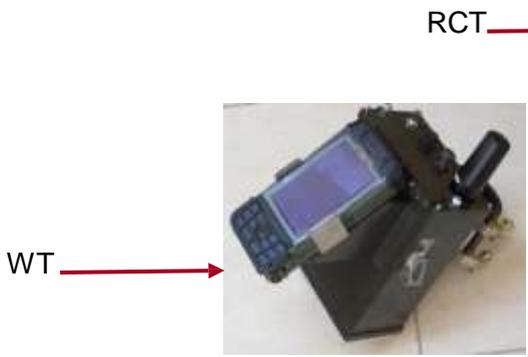
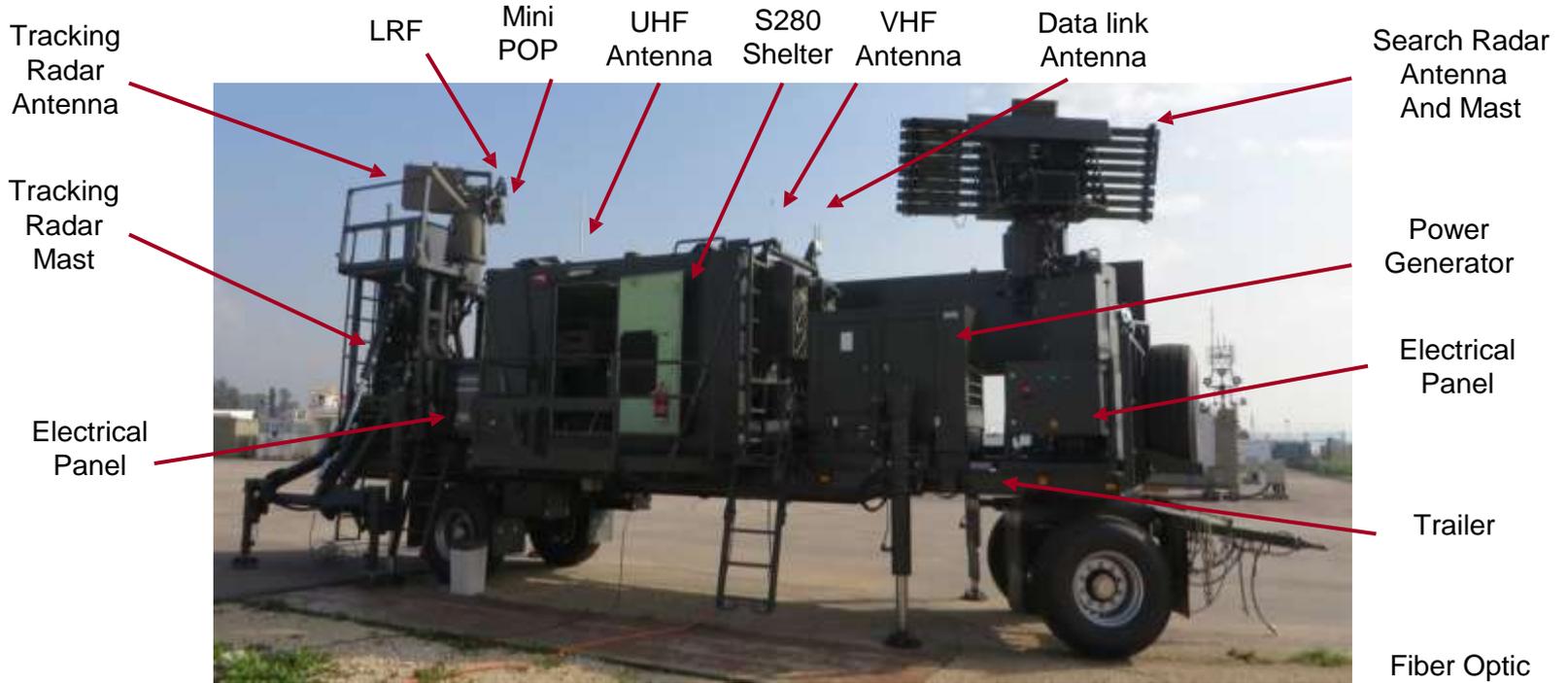








# Air Defence Fire Control Radar







RF Seeker Assembly



Assembly / Testing /Qualification of RF Seeker



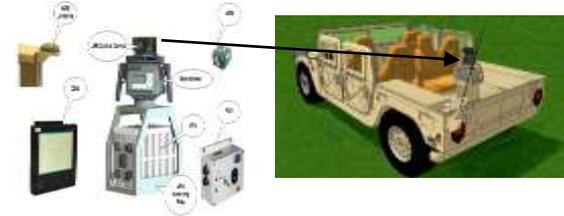
Pinaka Rocket Upgrade



Laser Guided Bombs

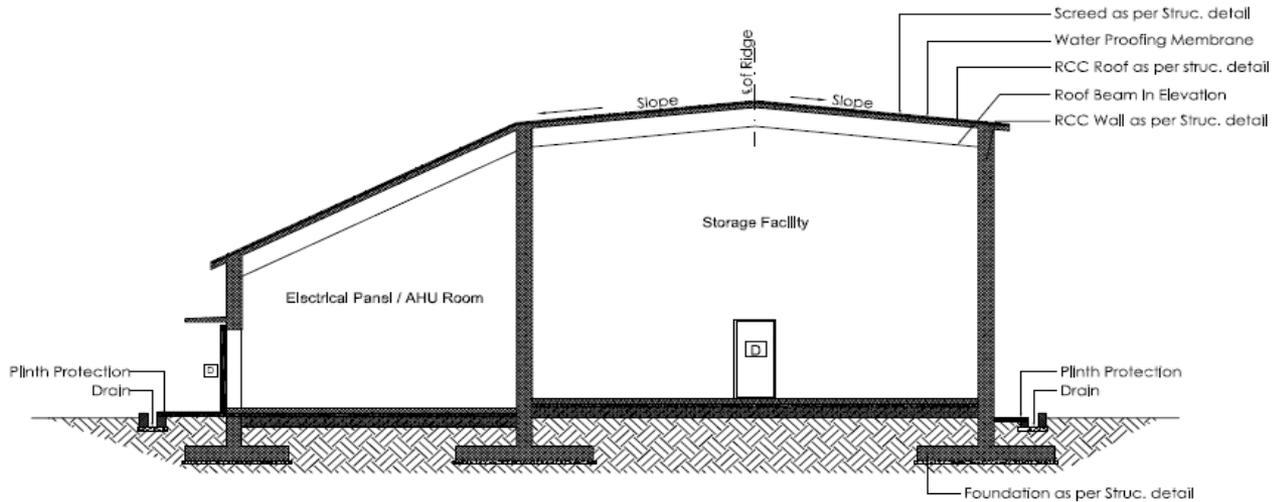
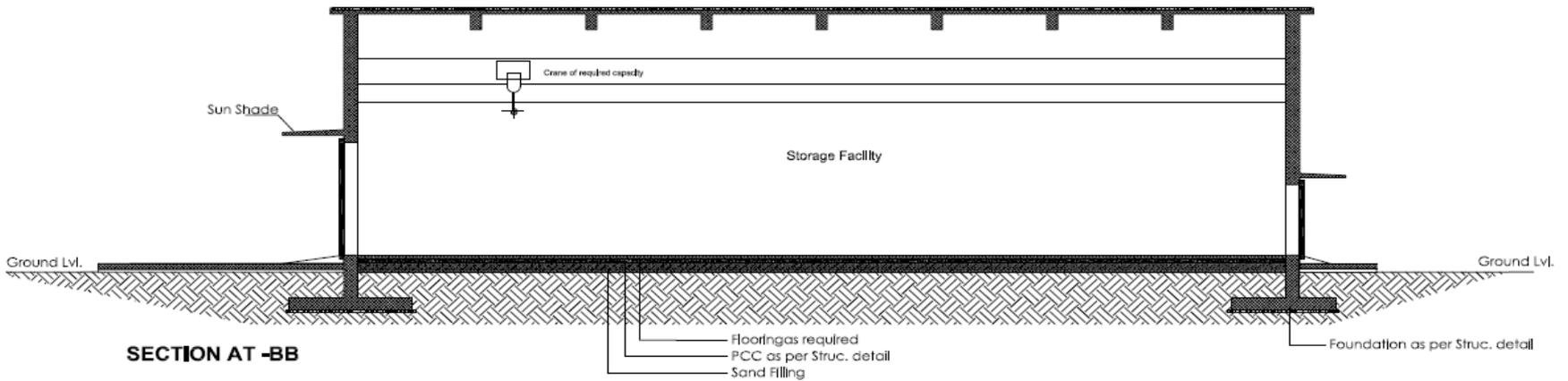


Inertial Navigation System



Heat Exchanger for Phased Array Radar Antenna

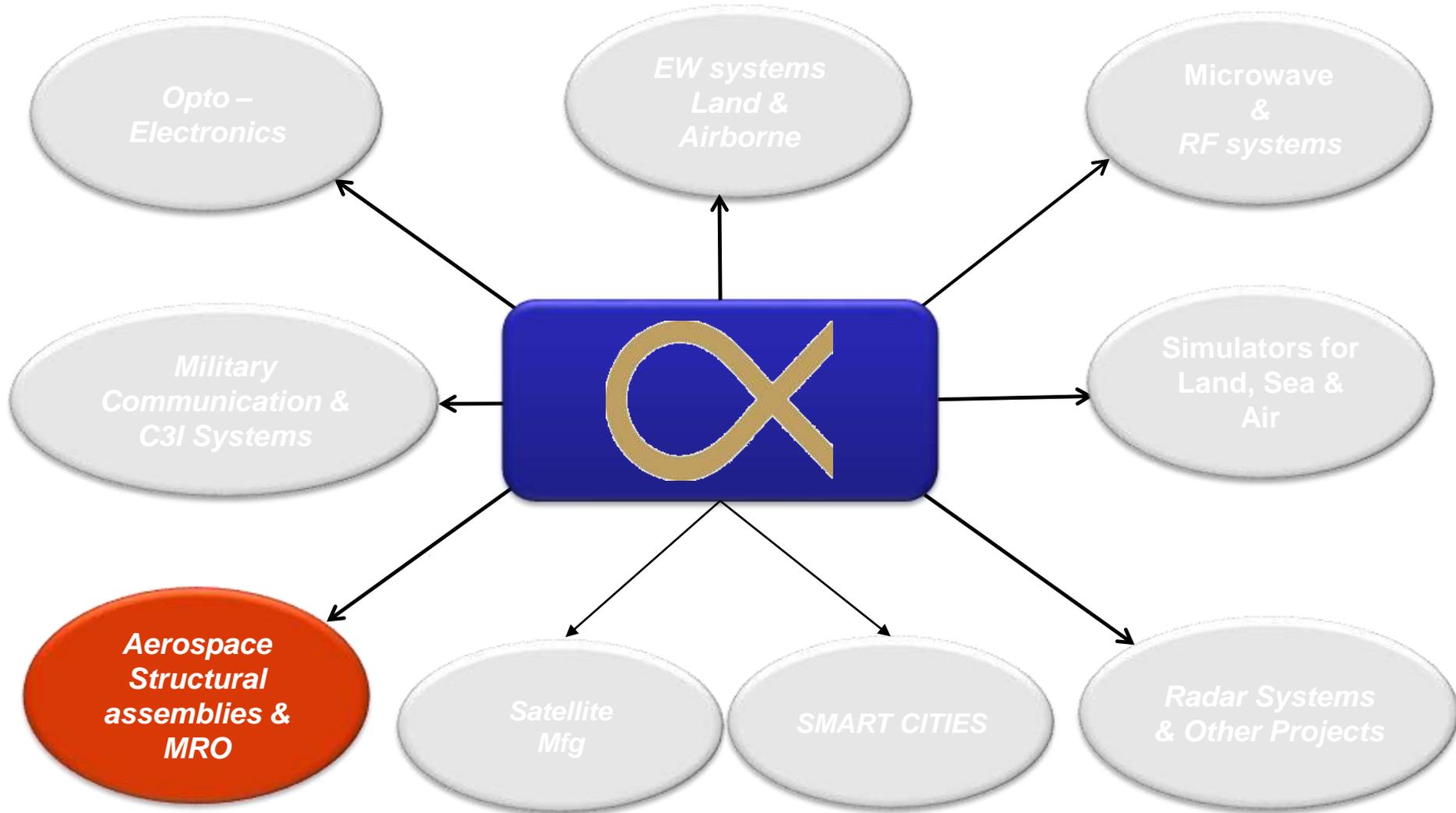




**SECTION AT -AA**







**Manufacture of :**

- Flapperons
- Rudders
- Wing Pylons
- Under Carriage Doors







**AIRFRAME STRUCTURES & PARTS**

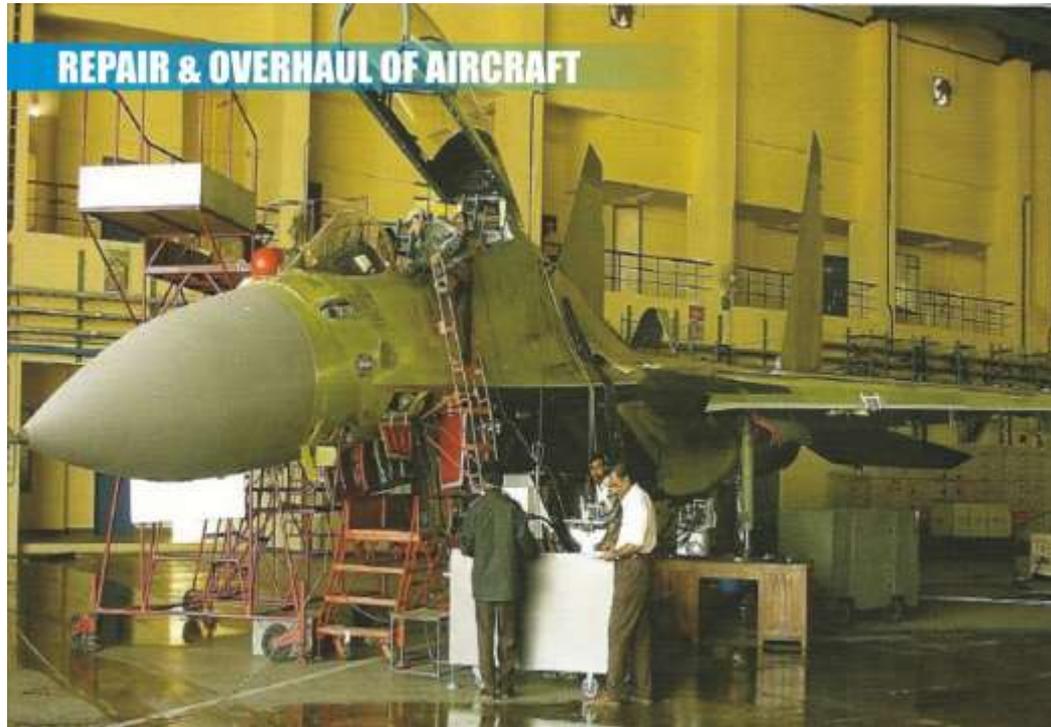


**Eagle Eye Modification on SU-30 Mk-I Aircraft with 6 Antenna**



Recently Alpha-Tocol bagged the order to carry out Antenna Structure modification at various IAF bases.

This activity has to be done for over 148 Aircrafts at the respective AFS Bareilly, Pune, Halwara, Jodhpur, Tejpur, Sirsa, Jabua & Gwalior.



**DISMANTLING OF COMPONENTS & ASSEMBLIES**

**REPAIR OF HATCH COVERS / PANELS**

**FUEL TANK EQUIPPING**

**MODIFICATION OF 6 ANTENNA INTEGRATION**

**FOR SU30 MKI**



- ❑ Alpha-Tocol has been awarded the prestigious contract for the supply of the Front Door Structural Assembly of Airbus A-320 from HAL Aircraft Division.
- ❑ Alpha-Tocol has established the necessary infrastructure and equipped with necessary tools and training has been provided to its personnel to perform the above task.
- ❑ Alpha-Tocol is the only other vendor in India to be awarded this Contract and the Airbus Team has visited and approved the facilities for manufacture.
- ❑ The order received is for delivery of 126 sets of Doors and 26 Jigs initially.
- ❑ The additional order expected for 600 sets in coming 5 years from 2017.



T1 SUB-ASSEMBLY JIG (LH & RH)



T4-T5 SUB-ASSEMBLY JIG (LH & RH)



EDGE MEMBER JIG (LH & RH)



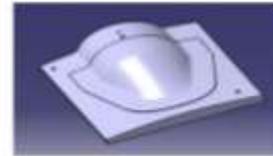
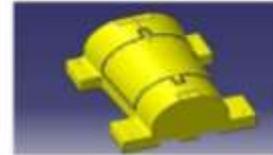
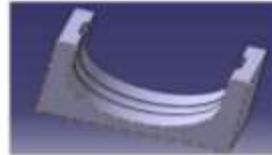
T6-T7 SUB-ASSEMBLY JIG (LH & RH)



REAMING TOOL (LH & RH)



CYLINDER FITTING JIG (LH & RH)



### IJT Rudder for HAL

Alpha Tocol have manufactured and supplied rudder assembly for HAL for the Intermediate Jet Trainer aircraft.



### PTA(UAV) Wing for HAL Bangalore

Alpha Tocol have manufactured and supplied wing assembly for HAL Aircraft Division, Bangalore for Pilotless Target Aircraft Lakshaya (UAV) program.

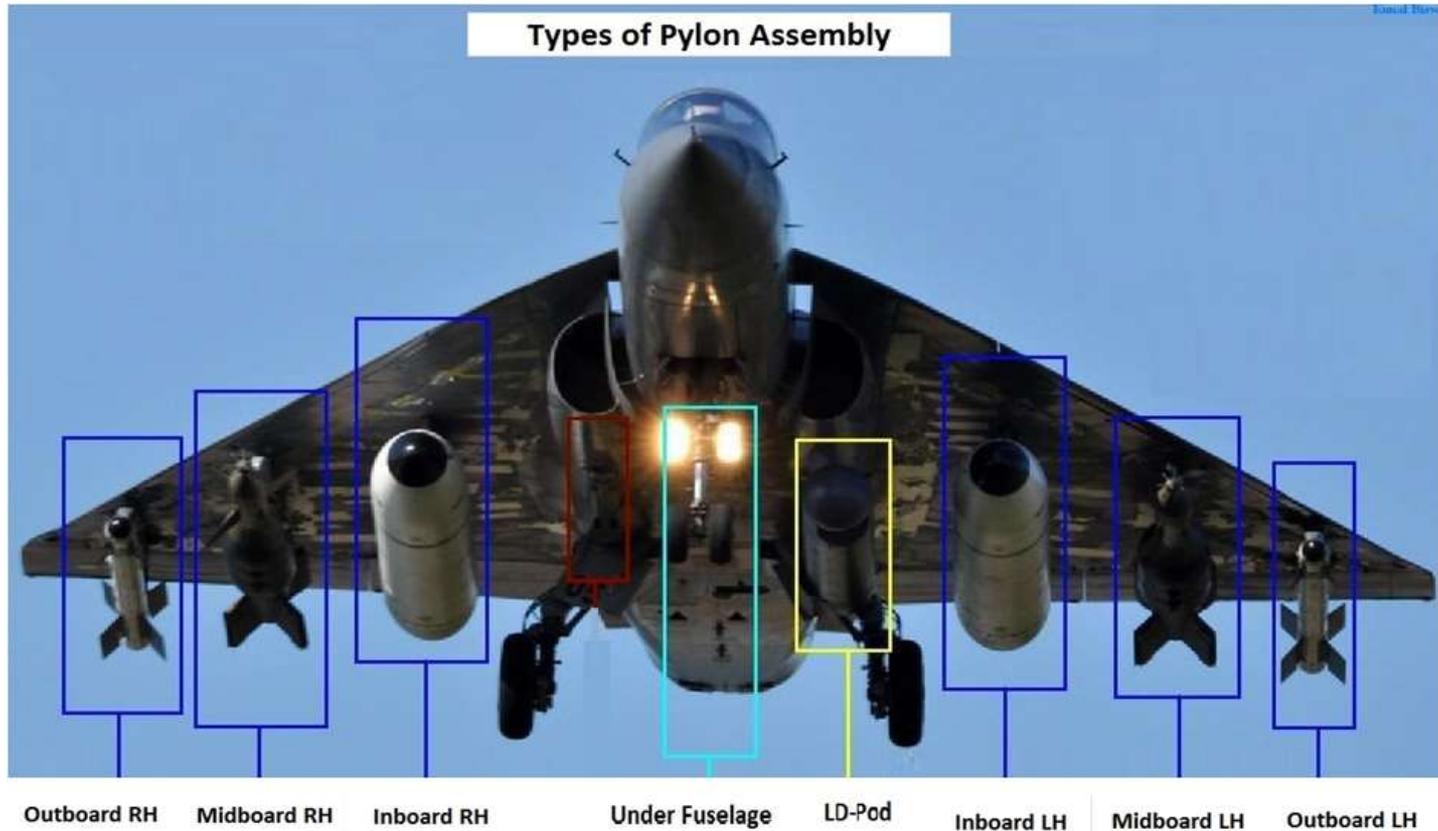


#### TYPE OF TOOLS:

Form Blocks, Stretch Forming Tools  
Sheet Metal Forming Tools,  
Chemical Milling Templates,  
Contour Templates, Drill Jigs,  
Drill & Trim Templates, Vacuum Fixture etc.,  
Materials Used: Hylum, Aluminum & Steel,  
Min Size : 50mm  
Max Size : 2000mm  
Total Qty : 4000



Order received for manufacturing of Pylon assemblies including Looming, Total 10 No's per A/c

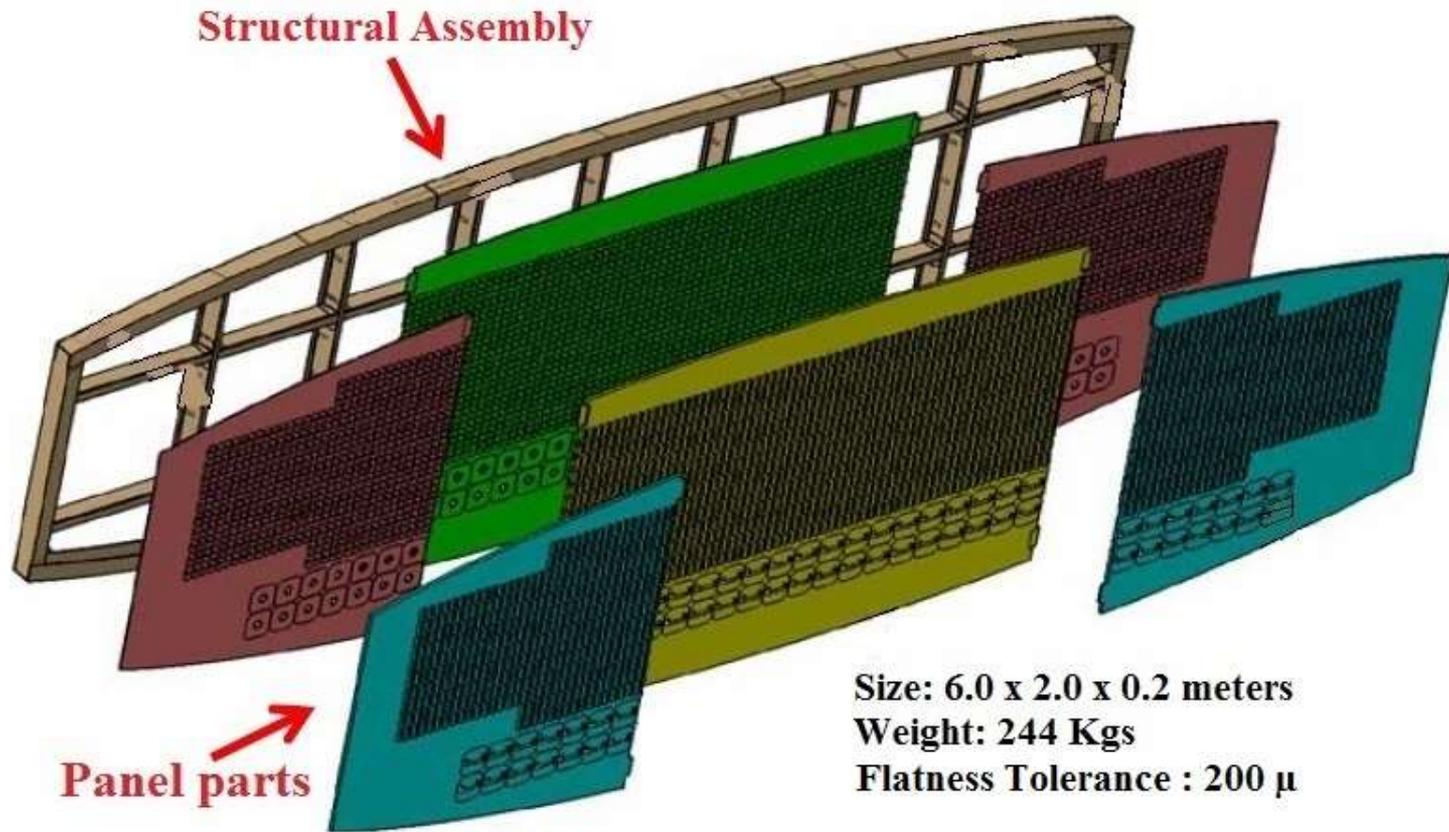


## Manufacturing & Assembly of Center and Rear Fuselage



**Rear Fuselage Assembly**

## ANTENNA ASSEMBLY





Clean Rooms



100 T Press



Prepeg cutting Machine



Autoclave



Oven



5 Axes Routing M/C



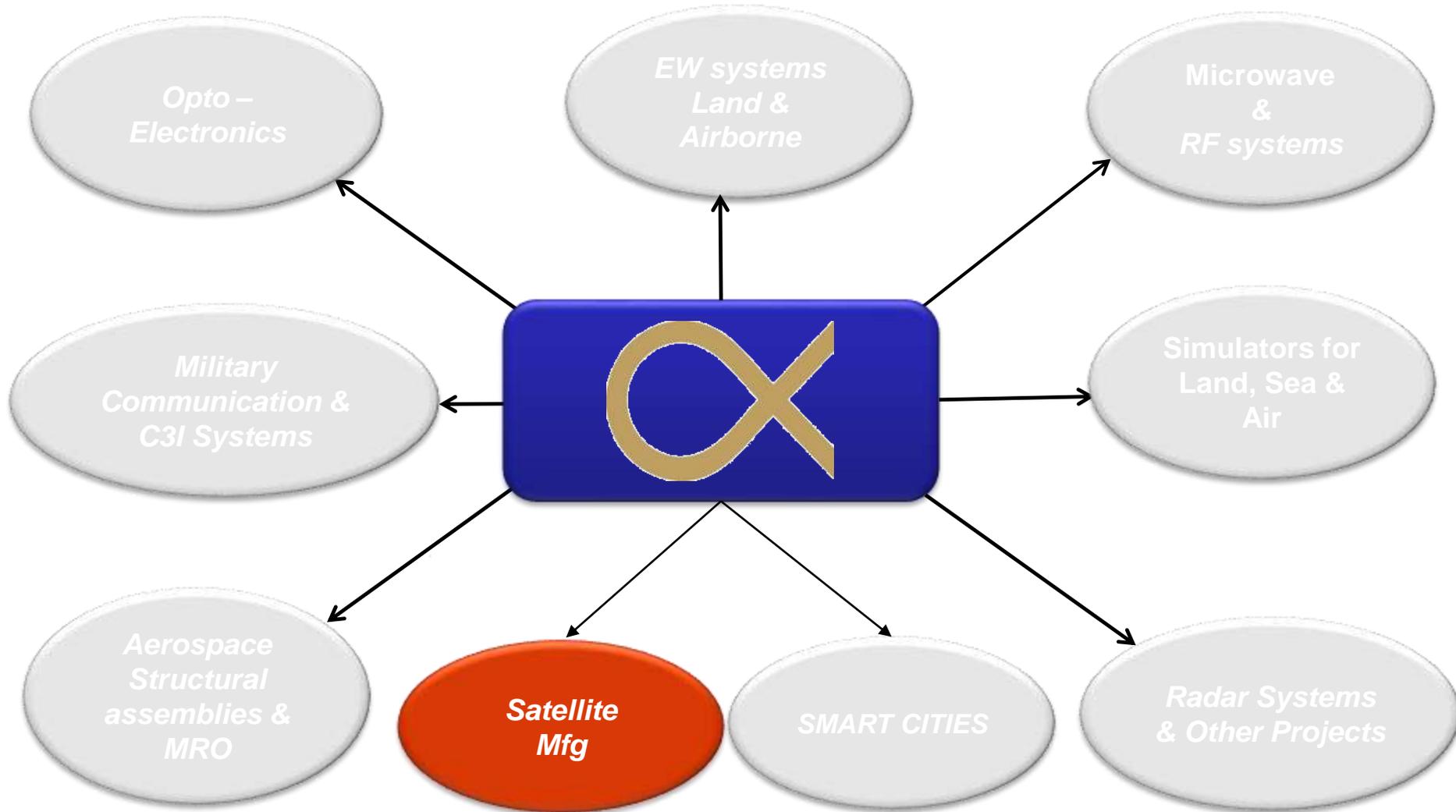
CMM



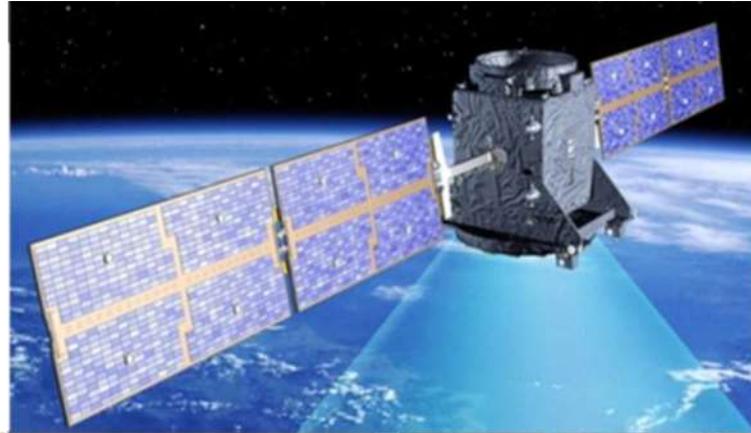
5 Axis CNC Machine



3 Axis CNC Machine

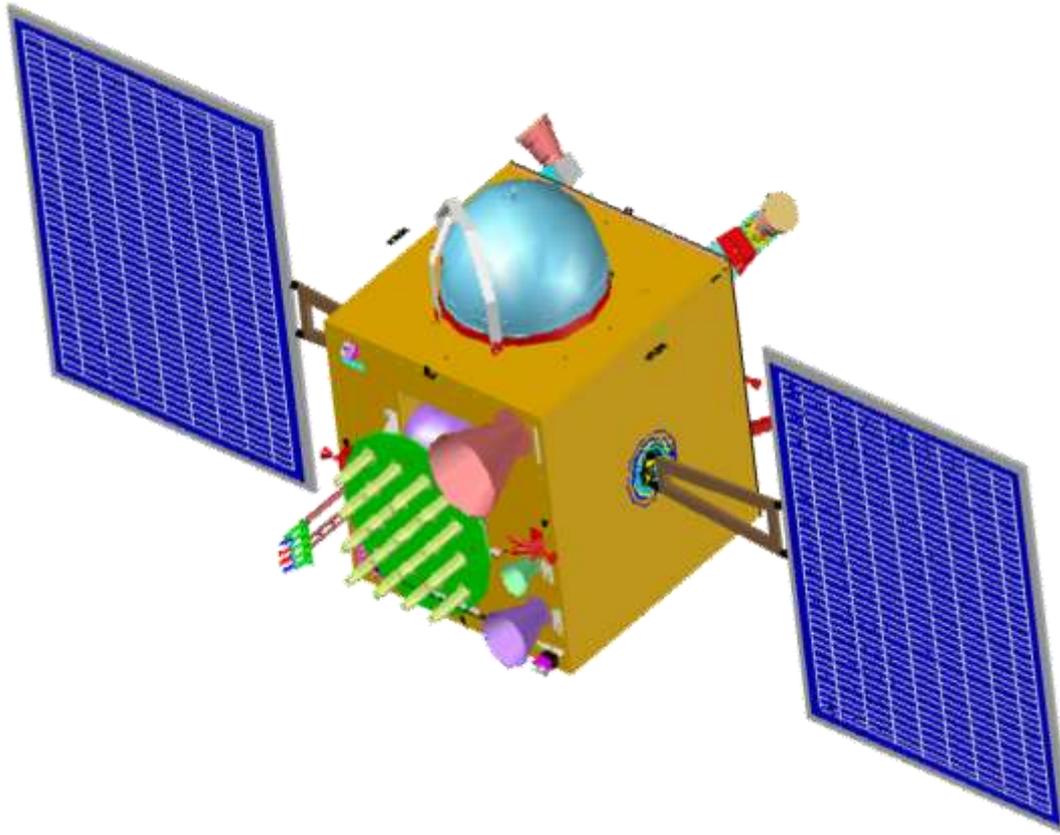


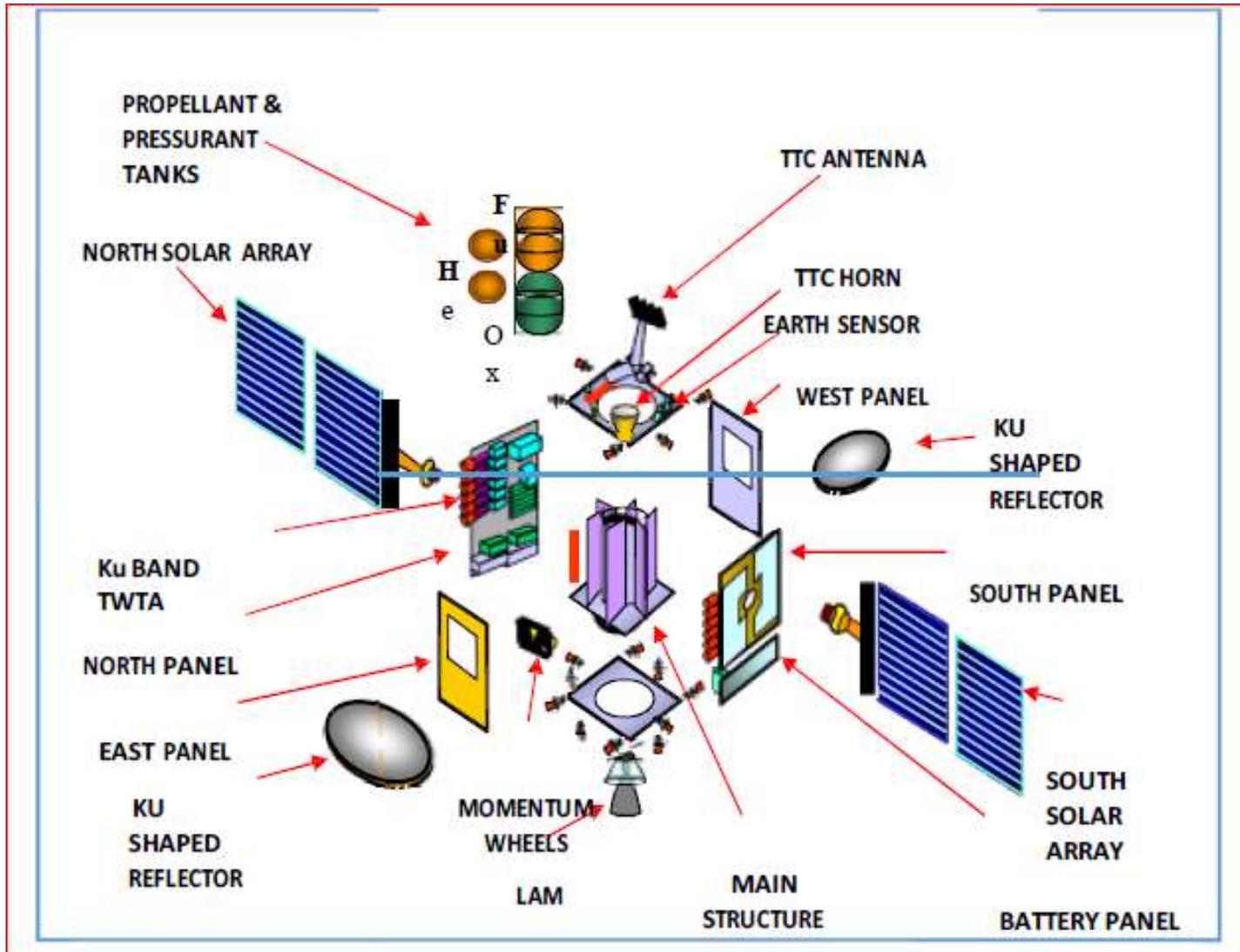


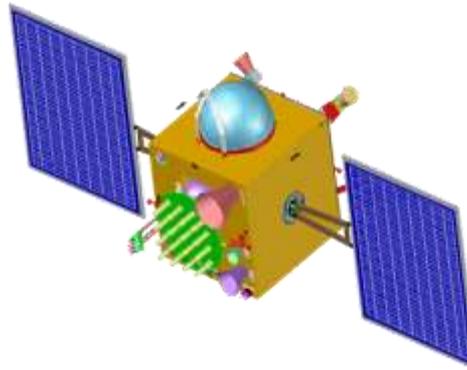
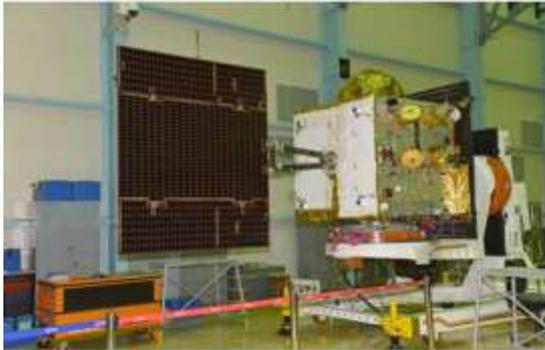
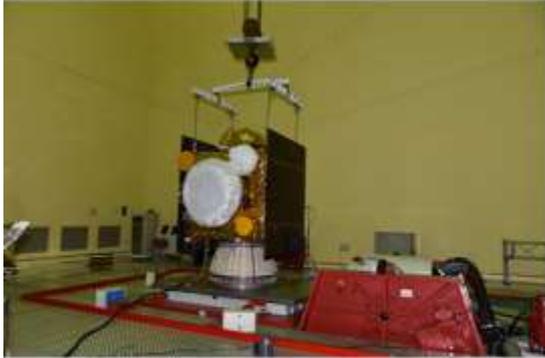


**Signing of Contract by Padma Shri. Dr. M. Annadurai, Director-ISAC, Bengaluru and Col. H.S. Shankar, VSM (Retd), CMD, Alpha Design Technologies, Bengaluru for Systems Assembly, Integration and Testing (AIT) of Standard Two Numbers of ISRO Satellites**

## ***IRNSS Spacecraft*** ***Indian Navigation Satellite***









**Compact Antenna Test Range**



**Satellite Integration Facility**



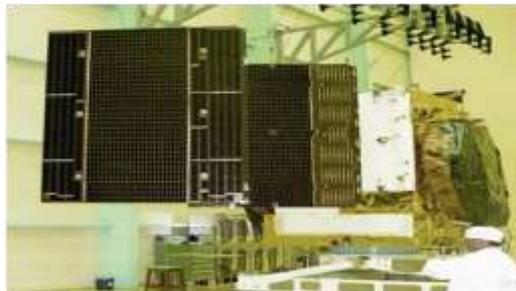
**HMC Fabrication Facility**



**Acoustic Test Facility**



**Thermo-vacuum Chamber**



**Solar Panel Deployment**



**Vibration Test Facility**

# NavIC: INDIAN REGIONAL NAVIGATION SATELLITE SYSTEM (IRNSS)



- Seven satellites in Geostationary and inclined Geosynchronous orbits
- Provides highly accurate position, velocity and time information in real time to a variety of vehicles
- Position accuracy of better than 20 metres
- Data with good accuracy for a single frequency user with the help of Ionospheric corrections

- All weather operation on a 24 hour basis
- Coverage over India and about 1500 km around it
- **IRNSS-1A, 1B, 1C, 1D, 1E, 1F and 1G Satellites already in Orbit**

## Other Applications

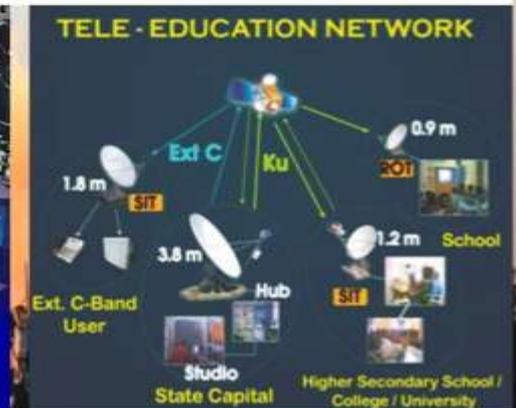
Surveying and Mapping, Precision Farming, Timing, Transport, Marine, Location based Services, Disaster management, Personal navigation, Mining, Recreational applications, etc



# Revival and Sustenance of North Eastern States' Tele-Education Networks



- Above program implemented by BEL during 2005-2010. Now defective / Obsolescent / Needs Upgrades.
- Part of EDUSAT Program.
- Total 325 Satcom STWS – Ku Band Hub, Teaching End & Remote Satellite Terminals (SITs).
- Recommissioning Hubs, Teaching Ends & SITs.
- About 2000 equipment to be replaced, returned, re-integrated, upgraded, networked.
- Work started.
- Will be completed –
  - Phase 1 : August 2017
  - Phase 2: March 2018



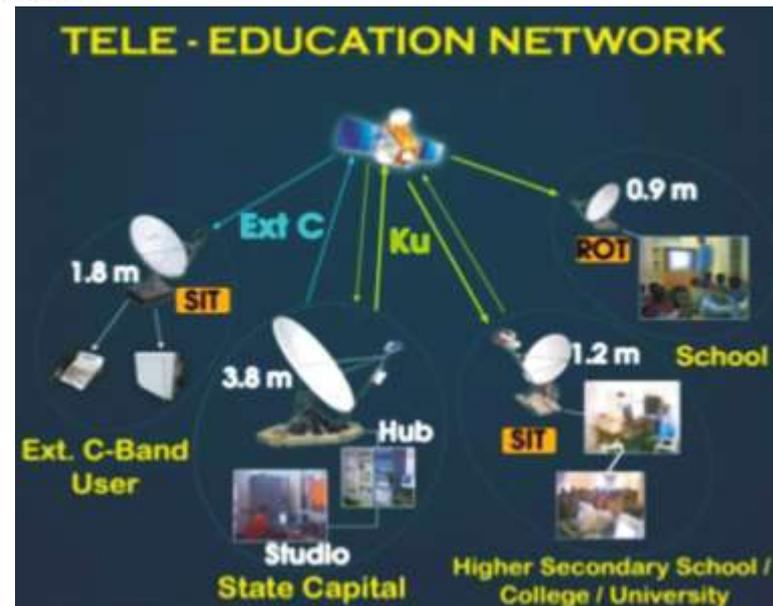
*Tele-education programme provides satellite-based distance education services for bridging rural-urban divide and improve quality in education sector across the country.*

## MAJOR BENEFITS

- Supplementing curriculum-based teaching
- Effective teachers' training
- Access to quality resource persons and education
- Taking education to every nook and corner of the country



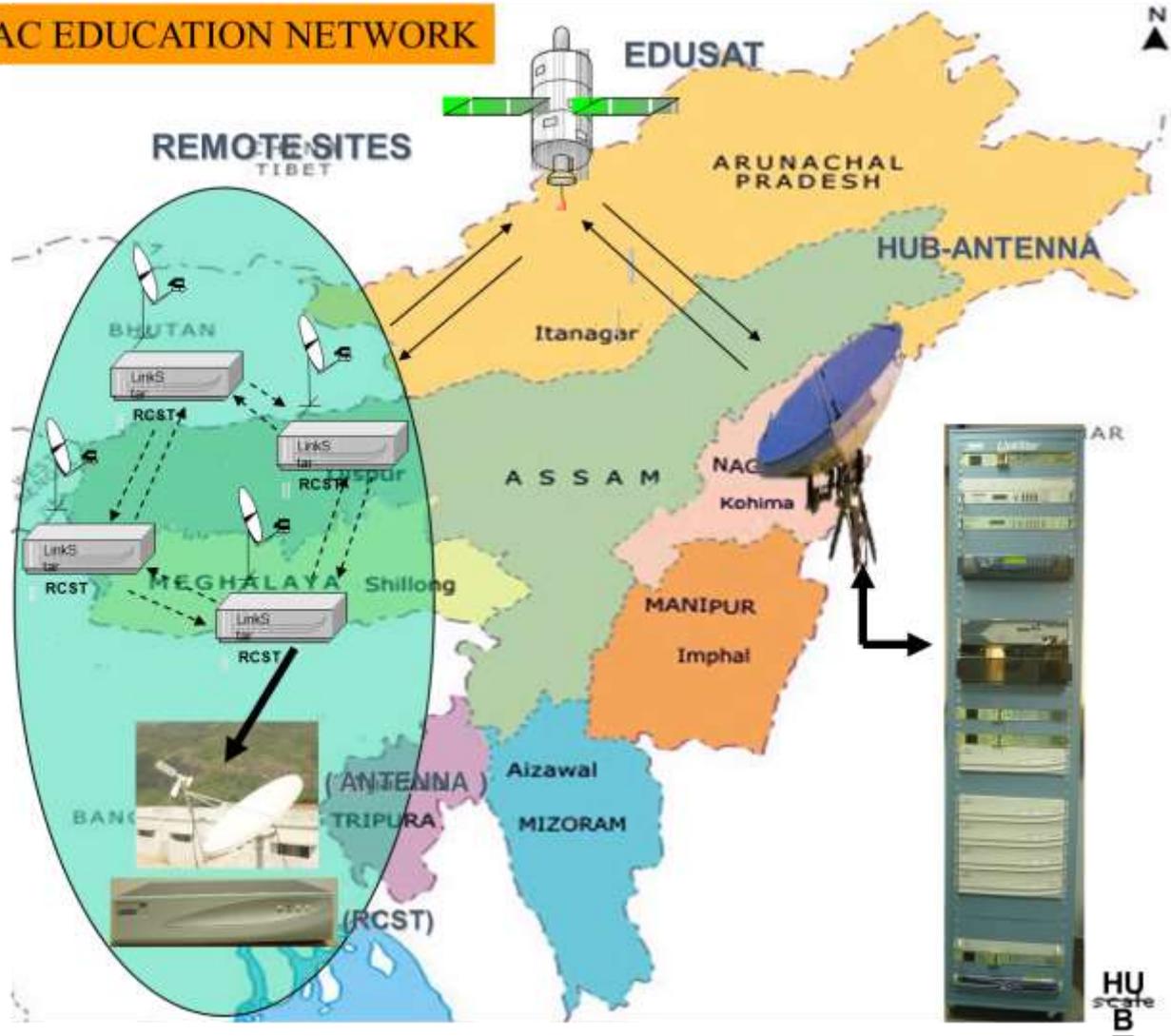
**Interactive Classroom**



**ROT Classroom**



**NESAC EDUCATION NETWORK**



-  Live Video Consultation with Reputed Doctors
-  Instant Diagnostics
-  Preventive Health Checkups
-  Digital Health Records



TESTS REQUIRE  
LANCET PRICKS  
OR SMALL  
SAMPLES OF URINE



INSTANT  
RESULTS

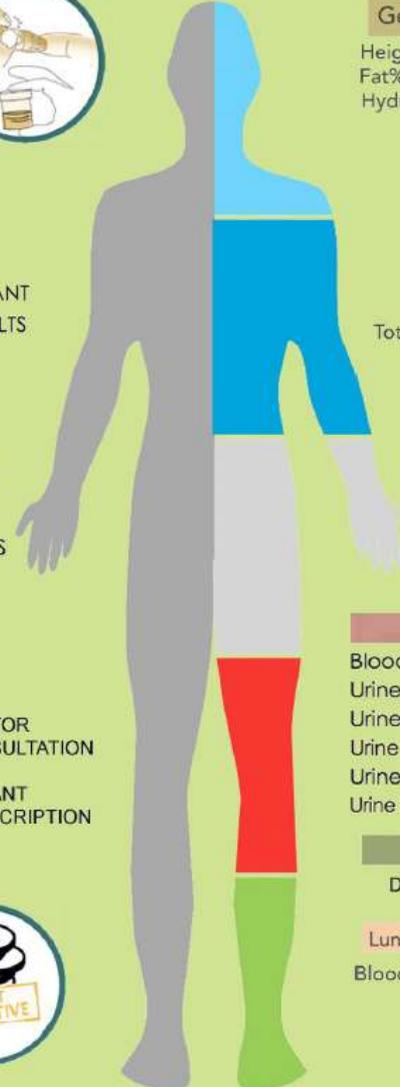


EASY TO  
FOLLOW  
REPORT  
FORMATS



LIVE  
DOCTOR  
CONSULTATION  
AND  
INSTANT  
PRESCRIPTION

COST  
EFFECTIVE



### General Body Checkups

Height	Weight	BMI
Fat%		Muscle%
Hydration		Bone Density
		Blood Pressure
		Pulse Rate
		Instant Temperature

### Cardiac Checkups

12 Lead ECG
Heart Rate
Blood Oxygen Saturation
Total Cholesterol (Lipid Profile)
LDL
HDL
Triglyceride

### Reproductive and Child Health

Pregnancy	HIV I & II
Blood Hemoglobin	Fetal Doppler HR
Urinary Track Infection	

### Diabetes and Kidney

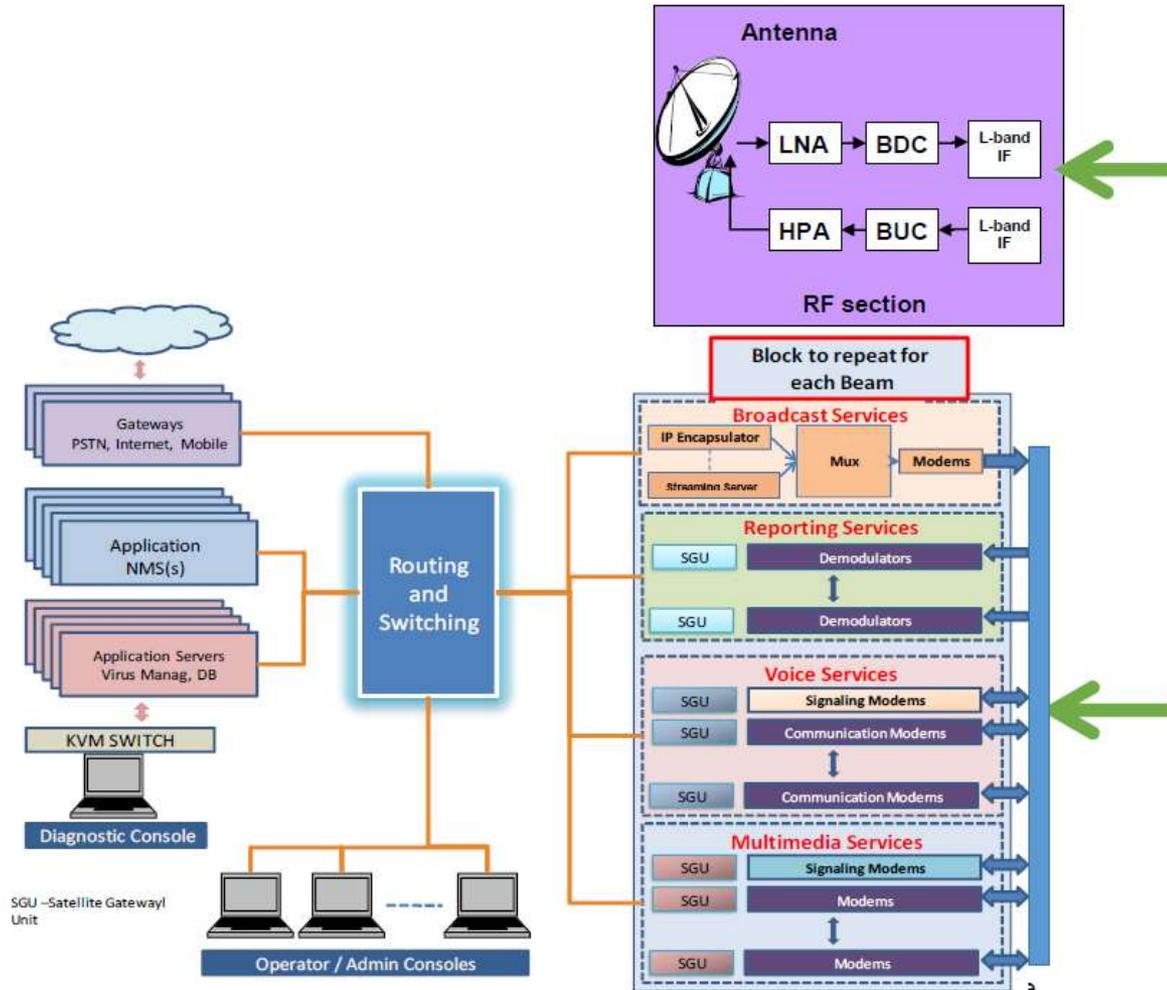
Blood Sugar	Urobilinogen
Urine Protein	Urine Nitrite
Urine Sugar	Urine pH
Urine Leukocytes	Urine Ketone
Urine Bilirubin	Urine Blood
Urine Specific Gravity	

### Infectious Diseases

Dengue	Malaria	Typhoid
--------	---------	---------

### Lungs and Respiratory Checkup

Blood Oxygen Saturation (SpO2)
Spirometer
FVC
FEV1
PEF



ADTL received a purchase order for installation of VSAT terminals at 6 following countries from Department Of Space (DOS), Government of India.

These terminals are used for demonstrating the technologies like video conferencing, Data, Internet usage and broadcasting.

1. Afghanistan
2. Bhutan
3. Maldives
4. Nepal
5. Bangladesh
6. Sri Lanka



The GSAT-9 has the potential to be utilized for various broadcasting and interactive telecommunication applications. These applications would benefit the member countries to address their specific needs. In addition, the satellite will also be used for supporting applications that include Disaster Management Support, Broadcast of Meteorological Data, Networking of academic, scientific and research institutions. The intended applications of GSAT-9 would strengthen the regional cooperation among the member countries.









# MSS GROUND NETWORK

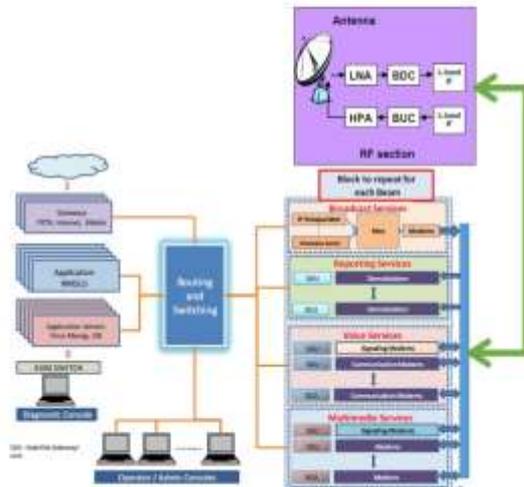
Alpha Design Technologies received an order from SAC, Ahmedabad for Supply and Integration of MSS Hub Baseband system

The HUB station will be a centralized control system for the multi-beam MSS services network. It should support four different services i.e. one-way reporting, two-way voice communication, multimedia and broadcast services. All network operations in all five beams are to be managed and controlled by the MSS HUB. It also provides the required interfaces between MSS systems and PSTN/terrestrial network.

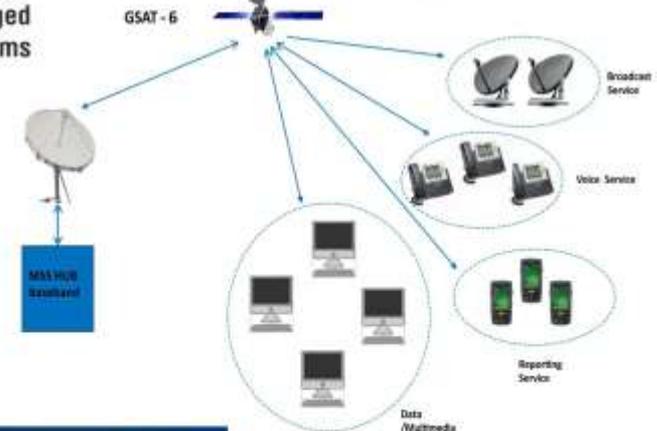
The HUB consists of three main component sections.

1. C-band antenna with RF section
2. Base band section
3. Terrestrial gateways – SMS, PSTN, GSM, Internet

## MSS Hub System Configuration



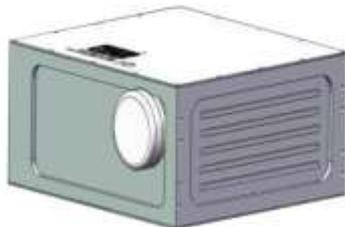
## Network Diagram



# Two Way MSS Terminal for Vessel Tracking

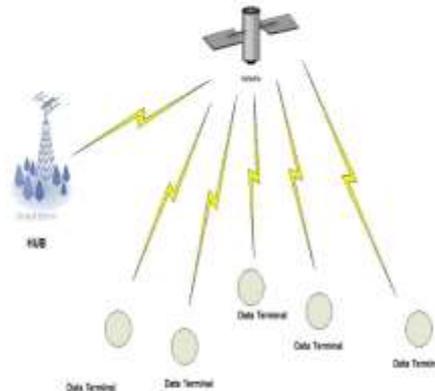
## FEATURES

- Customer: Space Applications Centre (SAC), ISRO
- Scope of the Project: Development & Manufacturing of MSS based Two-way Data Terminal for Vessel Tracking which is an S-band transceiver with two-way data communication capabilities at programmable bit rates.
- Features:
  - Low-cost
  - low-power consumption
  - long standby time
  - Ruggedized for maritime climate
  - Mass producible
  - TDMA Protocol for communication with Satellite Hub
- Hardware & Interfaces:
  - The hardware comprises of Base-band processor, modem with RF transceiver & an RF Front-End module
  - GPS, Wifi (Wireless LAN 802.11 Std) & Bluetooth interfaces

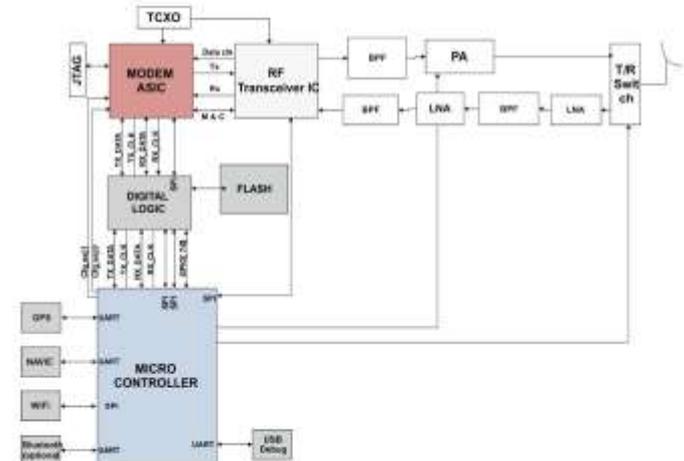


## SYSTEM CONFIGURATION

- Mobile satellite services are known for offering extensive coverage and tracking solutions irrespective of geographic conditions.
- Two Way MSS Terminal for Vessel Tracking is a maritime solution for tracking bulk numbers of vessels on Indian waters and their behavioral pattern from a control center.
- It is a secure way as the communication channel doesn't use the present dedicated wireless networks for obtaining the location of the vessels under control which in turn can assist the Control Centre Staff in identifying vessels of interests so that necessary prevention measures can be taken as part of a pro-active approach.



## BLOCK DIAGRAM

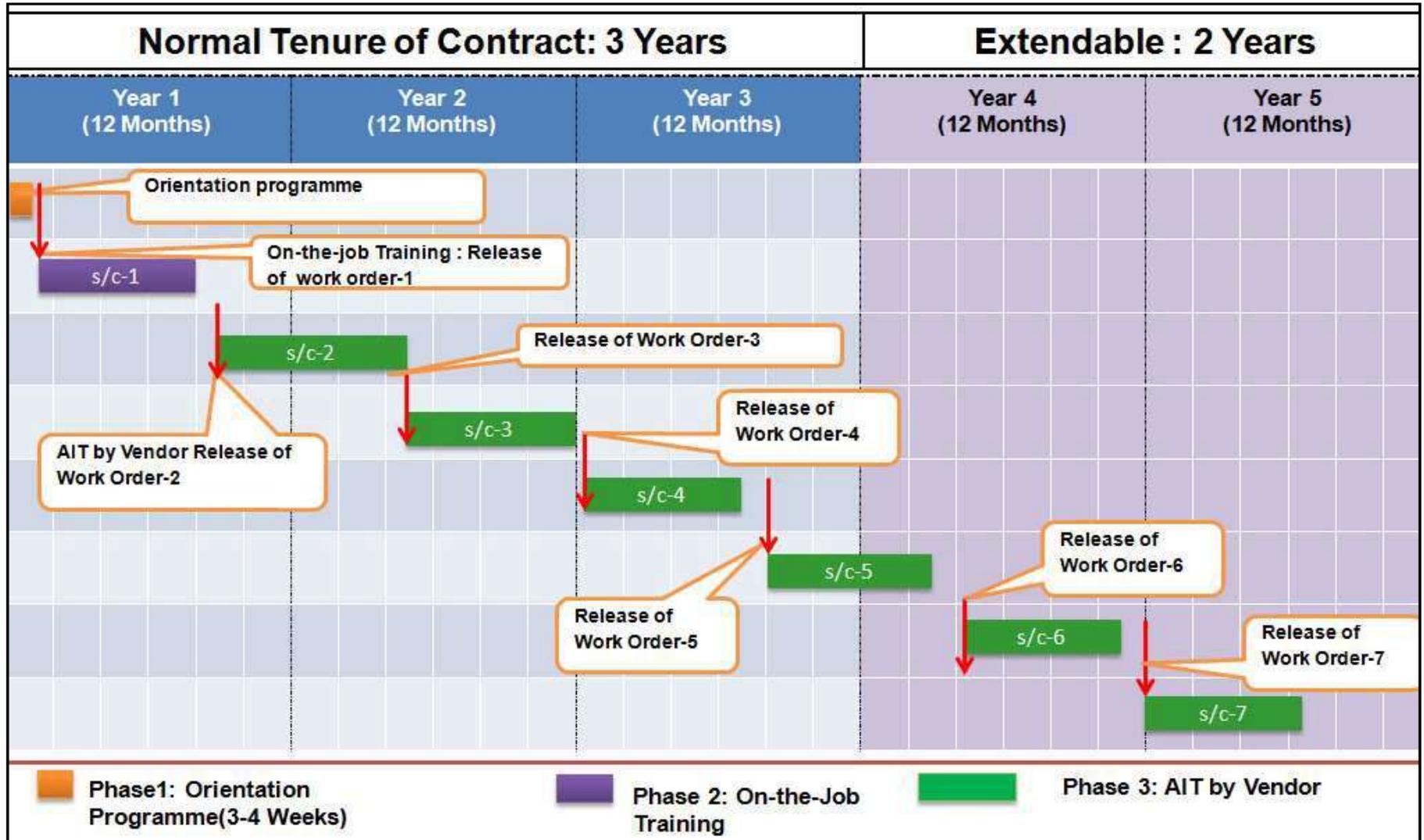


1. Hardware Development of IRNSS Receiver.
2. PC based SDR software development for GNSS signal processing.
3. Implementing simulink models on FPGA and obtaining the MATLAB Code for Tracking, Carrier acquisition and position estimation.
4. Converting the MATLAB Code to VHDL Code for the Target FPGA
5. Refining the Algorithms for better Position accuracy using RTK methods

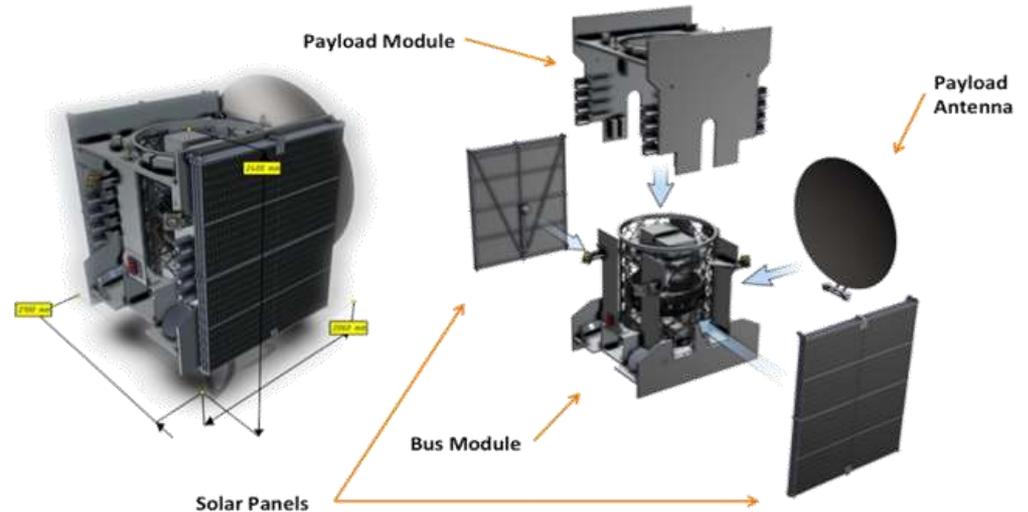


**1. SPACECRAFT ASSEMBLY, INTEGRATION AND TESTING (AIT) OF  
ADDITIONAL SATELLITES (RFP RESPONSE SUBMITTED 05 Jan 2018).**

<b>Satellite Bus Category</b>					
<b>Satellite Bus</b>	<b>No. Of Engineers</b>	<b>No. Of Diplomas</b>	<b>No. Of Technicians</b>	<b>Total</b>	<b>Schedule (in months)</b>
<b>I-1K/IRS-Bus</b>	<b>18</b>	<b>6</b>	<b>12</b>	<b>36</b>	<b>7</b>
<b>I-2K /I-3K Bus</b>	<b>20</b>	<b>8</b>	<b>16</b>	<b>44</b>	<b>8</b>
<b>I-4KBus</b>	<b>25</b>	<b>10</b>	<b>20</b>	<b>55</b>	<b>10</b>



## 2. FABRICATION, ASSEMBLY, INTEGRATION & TESTING OF SMALL AND SEMI MEDIUM SATELLITES FOR ISRO THROUGH ANTRIX



3. SPACECRAFT HARNESS REALIZATION & ASSOCIATED ACTIVITIES OF STANDARD ISRO SATELLITES (EOI RESPONSE SUBMITTED ON 24 OCT 2017)
4. SUPPLY, INSTALLATION AND COMMISSIONING, OPERATIONS AND MAINTENANCE OF THE GROUND NETWORKS FOR KU-BAND SATELLITE (SAARC COUNTRIES) (RESPONSE SUBMITTED ON 20 OCT 2017)
5. SUPPLY, INSTALLATION AND COMMISSIONING, OPERATIONS AND MAINTENANCE OF HUB, INTERACTIVE TERMINALS, RECEIVE ONLY TERMINALS FOR SATELLITE BASED DISTANCE LEARNING PROGRAM UNDER MINISTRY OF SKILL DEVELOPMENT (RESPONSE SUBMITTED ON 28 AUG 2017)
6. 2.4M ANTENNA SYSTEM FOR MEOSAR PROJECT FOR ISTRAC (RESPONSE SUBMITTED ON 20 JULY 2017)

- 7. DEVELOPMENT OF HUB BASEBAND SOFTWARE SYSTEM FOR SATCOM BASED COASTAL SURVEILLANCE SYSTEM (RESPONSE SUBMITTED ON 04 SEPT 2017)**
- 8. SATCOM NETWORK FOR RAIL MONITORING (SNRM) UNDER MSS GROUND APPLICATION PROJECT (RESPONSE SUBMITTED ON 06 SEPT 2017)**
- 9. SUPPLY, INSTALLATION AND COMMISSIONING OF 11M KU BAND RECEIVE ONLY EARTH STATION (RESPONSE SUBMITTED ON 11 NOV 2017)**
- 10. SUPPLY, INSTALLATION, COMMISSIONING AND MAINTENANCE OF MULTI MISSION METEOROLOGICAL DATA RECEIVING AND PROCESSING SYSTEM (MMDRPS) (RESPONSE SUBMITTED ON 07 NOV 2017)**

**SDR FOR IAF**



**SDR FOR ARMY**



**IFF (JOINT IPR WITH DRDO)**



**ALPHA RADAR PROJECT**



**MICROWAVE PROJECTS**



**POTENTIAL BUSINESS**  
**(2018-23)**  
**RS. 5000.00**  
**Crs**

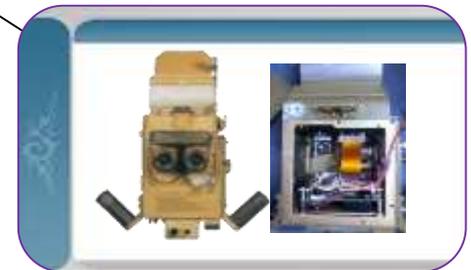
**INS (ARMY)**



**ZU-23 GUN UPGR**



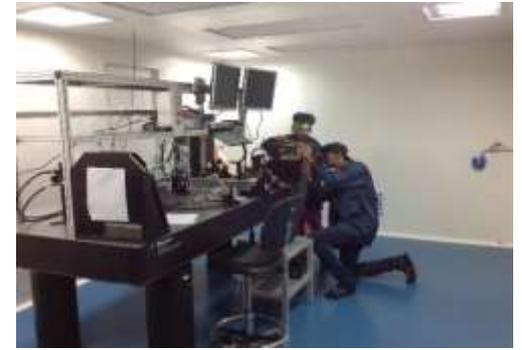
**BMP CDR TI SIGHT**  
**(JOINT IPR WITH DRDO)**



***ASSEMBLY LINE  
&  
TEST FACILITIES***

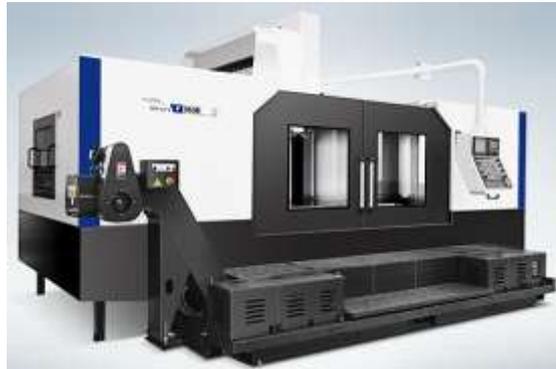
# Assembly Line - Opto-Electronics group















**Thank you**