

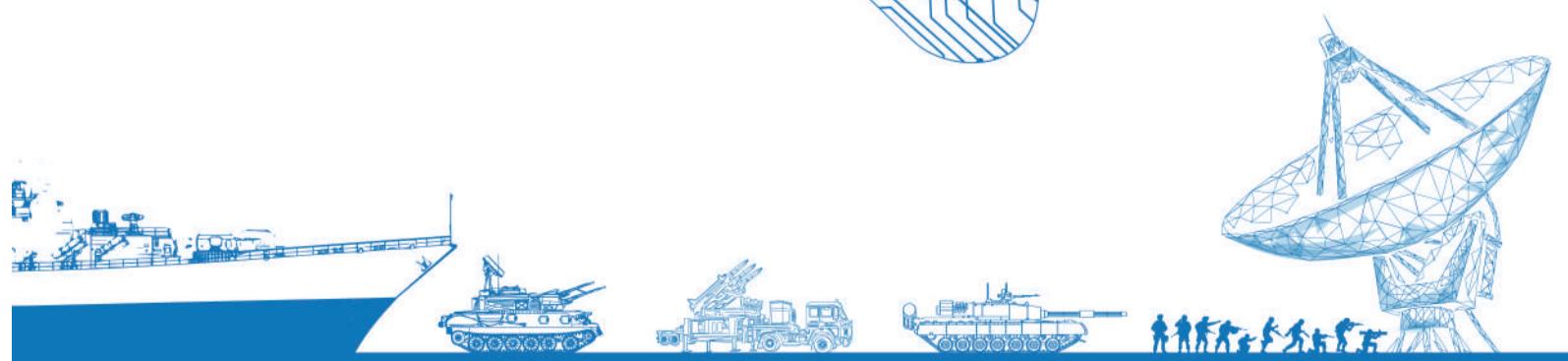
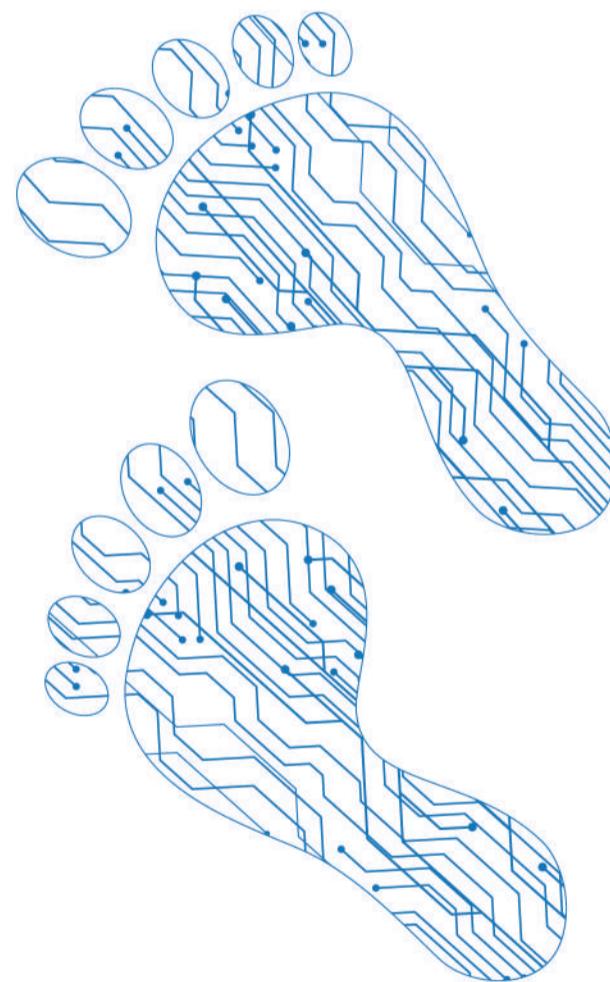


5-9 FEBRUARY 2020 LUCKNOW, UTTAR PRADESH

FOOTPRINTS

PIONEERING DEFENCE INNOVATIONS IN INDIA

A directory of India's leading MSMEs and Start Ups







Shri Rajnath Singh Raksha Mantri

Government Of India



Rajnath Singh @rajnathsingh · Aug 9, 2019

There is greater possibility now because the contribution of digital technologies in defence sector is on the upswing and India has strong capabilities to develop such technologies where **startups** have a significant role to play. [@DefProdnIndia](#) [@makeinindia](#) [@investindia](#)



Rajnath Singh @rajnathsingh · Nov 11, 2019

Delighted to interact with the **Innovators** and Startups working in the Defence sector at **#DefConnect** in New Delhi. Defence sector will play a major role in making India a \$5 trillion economy. Our aim is to make the Indian defence industry self-reliant & less dependent on imports.



Dr. Ajay Kumar

Defence Secretary

Government Of India

डा. अजय कुमार
रक्षा सचिव

Dr. Ajay Kumar
Defence Secretary



भारत सरकार

रक्षा मंत्रालय

Government of India
Ministry of Defence

Message

It is heartening to note that MSMEs are contributing significantly to defence manufacturing primarily at the sub-system and component level. Nearly 8,000 MSMEs are engaged in supplying various items to OFB and DPSUs.

There never had been a dearth of innovators in the country and initiatives like industry funded Make II, Innovations for Defence Excellence (iDEX), Start-up India, are acting as potential startup magnets. In recent times, the Ministry of Defence has come up with several initiatives like setting up of a Defence Investor Cell to address the issues being faced by vendors especially MSME vendor, making the Govt testing facilities available to private sector, implementation TReDS etc to encourage participation of private industry in defence and aerospace. The response is overwhelming and creating huge interest among the startup community.

DefExpo 2020 to be held at Lucknow is expected to be the largest participation of exhibitors ever from defence manufacturers, OEMs and MSMEs. Through the magazine "Footprints" we celebrate the commitment and participation of MSMEs and Startups in Defence and Aerospace."

New Delhi,
February 1, 2020.



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Editorial

**Sanjay Jaju, IAS,
Joint Secretary, DDP**

Every decade has a few milestone magnets that define that time. This decade is indeed the one that belongs to startups and entrepreneurs. The startup ecosystem has attracted thousands of young talented brains all over the world, and India has also joined the race in a prolific manner. India is quickly becoming a leading global startup hub with rising number of entrepreneurs, incubators, international and domestic VCs, and multinational corporations who are turbocharging the development of a burgeoning tech scene in the country.

Indian government has been supporting these entrepreneurs and startups under Make in India with initiatives like Innovations for Defence Excellence (iDEX), Start-up India, Atal Innovation Mission (AIM) etc. Defence and aerospace are strategic sectors under 'Make in India' and provide a big opportunity for startups and entrepreneurs to venture in this sector. Ministry of Defence aims to create an ecosystem which fosters innovation and encourages technology development in Defence by engaging R&D institutes, academia, industries, startups and even individual innovators. For bolstering this aim, industry funded Make II, iDEX, Dare to Dream, and Technology Development Fund have been launched, a Defence Investor Cell has been opened, TReDs has been implemented, apart from several other initiatives, which are embraced by young talents all over India.

There has also been substantial rise in number of accelerators and incubators to provide strategic mentorships and other such support that they require.

"Footprints" is an effort to applaud and acknowledge the contribution of trailblazers who are leaving their mark on the global map in Defence and Aerospace sector. This magazine showcases the success stories of pioneering 20 MSME entrepreneurs and 40 startups in this sector. "Footprints" has made an attempt to create a directory of 250 companies working in different genres of defence technologies like Aerospace solution, Avionics, Fabrication, Precision components, Artificial intelligence, Communication, Engineering solutions, Automation, Metals & Alloys and Medtech along with few others, to recognize the innovations in every sector of defence and aerospace. This magazine is expected to serve as a ready reckoner for all the stakeholders for first hand information about the MSMEs and start-ups working for Defence and Aerospace. We have also made an effort to collate the policies and initiatives of Govt of India, relevant to the Defence sector, to support and promote MSMEs and Startups.

Selecting the above success stories among the 400+ collected inputs from different sources was a tough assignment as all the companies have contributed towards enrichment of defence and aerospace ecosystem in their own unique way. We also salute the contribution of all the MSMEs and Startups who are working tirelessly towards making India self-reliant in the defence manufacturing sector.

We thank all persons, partners and organizations that supported us in realization of the first edition of "Footprints".

Disclaimer: information about enterprises and startups presented in the book is based on specific inputs received from the companies, associations, organization and combined with inputs from web pages only and edited to read consistently and to normalize the terms.

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Enterprises







Accord Software & Systems

Pvt Ltd.

Boosting Indian GNSS

Indigenous solutions for GPS & NAVIC

Company Brief

- Accord Software & Systems Pvt. Ltd. based out of Bangalore – INDIA, was founded in 1991. Accord offers Software and Electronics Hardware engineering services in the areas of Avionics, Real-Time Embedded Systems and Global Navigation Satellite Systems (GNSS). Accord has carved for itself a niche in the fields of Global Navigation Satellite System (GNSS) and Avionics Software Engineering Services.
-

Achievements

- Certificate of Appreciation for ASTRA MK-I Project in 2019
- Defence Technology Absorption Award 2013
- IETE Corporate Award 2013

Technology/ Product Brief

- GNSS Receiver Module
- Multi-Constellation receiver module tracks signals from GPS, GLONASS, BEIDOU, NAVIC (L5 & S), GALILEO & SBAS configurations.
- GNSS Time Server for different defence programs like AKASH-NG, QRSAM
- GNSS Time Server is a source of highly stable and accurate time and frequency source. It comes fitted with a Accord's GNSS receiver capable of receiving and tracking signals from GPS, SBAS (GAGAN), GLONASS and Dual frequency IRNSS.
- CDMA Transceiver for ASTRA MK-1 Missile program
- The CDMA Transceiver gives software solution for establishing telemetry and video link between two distant points.
- CEMILAC Certified CSWS for ALS Helicopter & CDU for LUH Helicopter

Management/ Contact

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idbd@accord-soft.com

01



Analogic Controls

India Limited

Solutions for Critical Applications

Electronics & Electro-mechanical Systems for Defence & Industrial requirements

www.analogiccontrols.com



Company Brief

- Analogic Controls India Ltd (ACIL) was established in 1996 by experienced professionals with a passion to design and develop Reliable Onboard / Ground Systems, provide end to end solutions and extend Field Services to the End User, meeting the stringent quality standards. ACIL designs and develops products and services for mission critical technologies of National Importance in Defense, Aerospace, Communications and Industrial Electronics.
- Analogic Controls India Limited established in 1996, is dedicated to Design, Engineering and Manufacturing of Electronics and Electro-mechanical Systems for Mission Critical Applications.

Achievements

- CEMILAC certification for manufacturing airworthy products
- Quality Management System certified to AS9100 Rev D

Technology/ Product Brief

- On-board & Ground Systems like Safety Arming Mechanism, Power Distribution Unit, Dual Redundant Communication System, DSP Card, DC Power Rack, etc.
- In the last 24 years the company has successfully developed and supplied Reliable Data Acquisition Systems, GPS based timing systems, Data Loggers, SAMs, Relay based Power Switching and Control Systems, Antenna Pointing Systems to DRDO, Defence PSUs and Services.



Management/ Contact

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02



Asteria Aerospace

Pvt Ltd.

Channeling AI through Aerial data

Drones and Drone networks for the Future

Company Brief

- Asteria Aerospace is a robotics and artificial intelligence Company that develops drone based solutions to provide actionable intelligence from aerial data. Our capabilities and intellectual property across the entire drone technology stack of hardware, software and analytics enable us to build deeply customized aerial remote sensing tools.
- Asteria has received a supply order from 43RR (Indian Army) for 1 quantity of Quadcopter for surveillance & security operations of Indian Armed Forces.

Achievements

- Indigenously designed and developed micro drone, A200 received provisional certification from the DGCA and was listed on DGCA's Digital Sky portal in July 2019.
- Secured the very first Unique Identification Number (UIN) in India, U0000001, by the Directorate General of Civil Aviation (DGCA) in October 2019.
- Secured the 2nd place in Drone Olympics, Aero India 2019 competition in surveillance & security category

Technology/ Product Brief

- Asteria has a series of drones for surveillance & defence sector – A200, A400, A400-Max & A410.
- Some of key features are:
 - Max endurance: 60mins at MSL
 - Max Speed: 45 km/hr
 - Service ceiling up to 5500 AMSL
 - Range: 10 kms LOS
 - Temperature: -10° to +55°C
 - Genesis, an indigenously developed secure & scalable digital cloud-based platform that displays real-time data monitoring and live video analysis. Genesis helps in connecting multiple Asteria's network centric UAV platforms and help in making informed data-driven decisions.



Management/ Contact

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Co-Founder
Nihar Vartak, Co-
founder
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03

Avantel Limited

Wired for Success

Specialising in Electronics, Satcom, Telecom & Software

Company Brief

- Avantel Limited, established in 1990, is a technology driven company with a 25+ yr legacy in Design, Development, Manufacture, Installation & Commissioning, System Integration, Testing & Evaluation of Defence Electronics, Satellite Communications, and Telecom & Software Systems.
- Avantel designed and developed various first of its kind, customized wireless/ Satcom products and solutions to meet the special requirements of Indian Defense Services.

Achievements

- Industrial Innovation Award 2019 for Top 25 Innovative Companies-2019
- ELCINA Defennovation Awards 2018 in Excellence in R&D - MSME Category
- 'SME Empowering India Awards 2018' under the category of 'Electronic Goods & Services 2018'
- EI Industry Excellence Awards for the Years 2015 & 2018

Technology/ Product Brief

- Avantel's core competencies include Wireless & Satellite Communication Systems, RF System Design, Embedded Systems & Digital Signal Processing, Network Management & Software Development and Engineering & IT services.
 1. KW HF Transceivers
 2. MSS (Mobile Satellite Services) Equipment
 3. UHF SATCOM Equipment
 4. High Power Amplifiers



Management/ Contact

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Dexcel Electronics Designs

Private Limited

Robust Design, Rugged Quality

Embedded Electronics and Equipment for the Forces

Company Brief

- Dexcel is a Fabless Embedded Product Engineering design house with the concept of "One Stop Solution Company" that can take up design and development of customized systems including Hardware, Software, and Mechanicals through Engineering Services and IT Consulting. Their core capability lies in Board level designs and systems on a programmable chip with expertise in FPGA and ASIC centric designs.
- Their focus is in Analog and Digital based, Compute Intensive, Programmable Logic, Data Acquisition based solutions for Defense Industry.

Achievements

- IES Udyog Rattan Award
- MSME DEFEXPO 2013
- ELCINA at SES 2014



Technology/ Product Brief

- Safety Weapon Interlock System
- Monitoring and Control for Warships/Industrial Safety Interlocking
 - Customizable Weapon Interlock Rule Set
 - FPGA based controller for Instant Response
 - Dual control mode – Manual and Auto
- High Speed On-board Video Compression
- Target visualization in military/automotive crash tests
- Programmable Compression Ratio to suit low bandwidth output channel
- Programmable frame rate and size
 - Camera Link Interface
 - Output in Serial, Parallel, HDLC and PCM Formats
- Secured IP Communication for classified data
- Tunneling of Encrypted Data Over Internet with High Security of Data

Management/ Contact

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Elektronik Lab

India Private Limited

Solutions for Land, Sea & Air

Making MoD assets Net centric

www.elektroniklab.com



Company Brief

- Elab was formed to pursue opportunities in the Land, Marine & Aeronautical communication segments. After significant accomplishments in this sector having developed domain knowledge of the above three sectors Elab have diversified into oceanography, telematics and maritime software / Simulators. Elab designs and integrates complex communications & navigation systems, and of course, also ensures that these are optimally maintained. By combining technological expertise in the field of communication and navigation coupled with a nationwide after sales support, Elab is a one-stop shop for all offshore and ship owners / managers to buy and maintain mandated SOLAS equipment and other communication and navigational aids.

Achievements

- Elektroniklab India Pvt Ltd has many significant "First of its kind" achievements including:
 - Part of the Indian Tsunami warning network
 - AIS based Tracking of fishing boats after the 26/11 Mumbai attack
 - Made in India Portable aircraft tracking for MODs / MHAs of many countries
 - Made in India Satellite soldier tracking MODs & MHAs of many countries
 - Enabling net centric & Marine Domain Awareness solutions for MODs
 - SOLAS compliant Made in India Ship Security Alert (Anti-Piracy)

Technology/ Product Brief

1. Connected aircrafts for the MOD that enables HQ to monitor their aircrafts minute by minute with the highest level of security & encryption.
2. Connected soldiers for MHA that enables HQ to monitor their troop or vehicular movements anywhere with tactical situational awareness in a secure encrypted environment.
3. Provide sales, tech support & Tracking for MOD /MHA organizations & state fisheries with portable Inmarsat Satellite phones from BSNL.
4. Provide Marine Domain Awareness solutions for maritime patrol aircrafts



Management/ Contact

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Founder & Managing
Director
info@elektroniklab.com

06

EsSEN Electronic Systems

Private Limited

Leading with Integrity

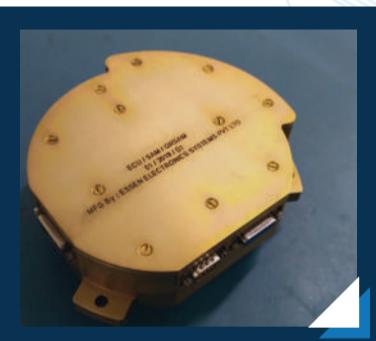
Customer Specific Solutions for Defence

Company Brief

- Essen Electronics Systems is an Indian Defence Licensed Company had been serving the nation for about two decades and is a dependable solutions provider for Indian Industry/Defence/Aerospace Sectors by way of providing services like Design, Development, Indigenisation, proto-type manufacturing, bulk manufacturing of Electronics, Electro-Mechanical & EW Systems for various applications and also providing expertise Onboard services like STW, HATs & SATs along with RRC/AMC Services.

Achievements

- Essen was awarded 'Industry Appreciation Award' through Padmabushan Dr. A. Sivathanu Pillai, CC(R&D) for the year 2007 for the efforts and commitment in development of PBAEM TARGET DETECTION SYSTEM
- Commendation Certificate and award for the Golden Jubilee Year 2008 of DRDO for valuable contribution in productionisation of few WEAPON ELECTRONIC SYSTEMS.
- Indigenously developed – Three onboard BrahMos Missile Systems



Technology/ Product Brief

- They have so far been involved in the following indigenization/development activities of Decoy System:
 - a. Launcher Test Panel.
 - b. RMF unit (Fire Control System)
 - c. Effectors & Jammer
- Besides the above, they had undertaken the following projects successfully:
 1. Varunastra Homing Electronics system
 2. Target detection System (Complete electronics) for PBAE Mines;
 3. Electro-Mechanical Detonator Placing Mechanism (EM-DPM)
 4. EM-LOG for IN Ships;
 5. Torpedoes' Muzzle Velocity and Pressure Measurement System for Ship and Submarine Launch

Management/ Contact

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Managing Director
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www.futuraautomation.com



Futura Automation

Pvt Ltd

A Passion for Excellence

Emphasis on Product engineering with aesthetics and zero defects

Company Brief

- Futura Automation is into custom design and manufacture of Rugged Computers and Displays since 1992. Over the last few years they have successfully designed and developed many Rugged Computer Systems used in critical defence, Space and Industrial Applications like Missile Launch Control Systems, Radar Tracking Systems, Satellite Tracking and Launch Systems and SCADA applications.

Achievements

- Several products that are used by Indian and Foreign Militaries around the world.
- Products are used in Army applications like Flycatcher Radar, Reporter Radar, BFSR-MR and Communication & Sonar applications in Navy.
- More than 10 Navies in the World use Futura Automation products.

Technology/ Product Brief

1. Custom Designed Rugged computers both Intel and ARM based
2. Custom Designed Rugged Displays from 3.5" to 75"
3. Drop-in-compatible Rugged Displays to BARCO, IRTS and other brands.
4. Multifunction Display consoles (Single, Dual and triple displays).
5. Multifunction (Intelligent) Displays from 3.5" to 75"
6. Customized FPGA based Electronics.
7. Man-portable rugged computers, tablets and laptops.



Management/ Contact

Sharat Rao, CEO
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08



ideaForge Technology

Pvt. Ltd.

Pioneering UAVs in India

Creating high performance, safe and autonomous Unmanned Aerial Systems

Company Brief

- ideaForge is India's largest manufacturer of indigenous UAVs for defence, homeland security and industrial applications. The organization has deployed over 700 systems and has trained over 1300 pilots in services.

Achievements

- First organization to indigenously develop and manufacture Vertical Take-off and Landing (VTOL) UAVs in India.
- Pioneer in the UAV industry in India and has multiple IPs to its credit, including the then world's lightest autopilot in 2009.

Technology/ Product Brief

- SWITCH UAV is an indigenously developed system for high altitude operations and can be operated in harsh environments due to its IP53 certification and wide operable range of -20° to +55° C. The system can send HD video transmission at 25x optical zoom throughout its operational range which is up to 15 km. Its range can be further increased by airborne data relay (ADR) technology. It also has best-in-class endurance of >120 minutes. SWITCH UAV is the only indigenously hybrid system to meet all the technical specifications of the Indian Army's mini-UAV order.

Management/ Contact

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Rahul Singh, Co-Founder & VP
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Jayasuriya Aero

Pvt Ltd

Manufacturing a Bright Future

Producing parts and components for various airborne platforms

www.jayasuriya.org



Company Brief

- Jayasuriya Aero is a Manufacturing unit based in Chennai. It is certified by CEMILAC, DRDO for Design and Development of Standard Parts, Fasteners, Expendables and LRUs for airborne applications. This Company has indigenized over 120 Series of Parts which covers over 15,000 individual Part Nos. and has obtained RCMA, CEMILAC clearance to use on various airborne platforms.

Achievements

- Award for Excellence in Aerospace Indigenization 2016

Technology/ Product Brief

- Products (with various International standards):
- Latches, Trigger Locks, Nuts, Bolts, Screws, Studs, Washers, Anchor/Dome Nuts, Floating Anchor Nuts, AA Rivets, Monel Rivets, Split Cotter Pins, Rubber P Clamps, Worm Clips, Lock Nut/Lock Washers, End and Hydraulic Fittings, Unions, etc.



Management/ Contact

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Kineco Limited

Fuelling Make in India

First Indian company to manufacture Indigenous composite Sonar domes for Naval war ships

Company Brief

- Kineco Group is a multidimensional composite products manufacturer in Goa, India. We are catering to diverse markets like aerospace, defence, railways, automotive, telecommunication, naval structures, power generation and chemical plant equipment's and work closely with DRDO, ISRO, INDIAN NAVY on a number of prestigious programs under Make in India initiative for Indigenous manufacturing.

Achievements

- Felicitation of Kineco for its significant contribution to the 'MAKE IN INDIA' in Defence, at New Delhi on the occasion of the Indian Navy Day on December 4, 2019.
- ToT License from DRDO for Controlled process monitoring system and Vacuum assisted Resin Transfer Molding (VA-RTM) process for manufacturing Sonar Domes for Indian Naval warships received on the occasion of DefExpo 2018 in Chennai.
- ICERP-JEC Product Innovation Award in 2017 for Sonar dome product (award ceremony photo attached)
-

Technology/ Product Brief

1. Composite Bow mounted Sonar Domes for P 15 A class of Naval warships admeasuring 10.5 X 3.0 X 3.5 (l x w x h) meters, manufactured for the first time in India through R&DE- DRDO and supplied to Mazagon dock Shipyards Ltd.
2. Design and development of Composite Sonar Window (5.5 mtr x 3.3 mtr x 2.7 mtr) to Cochin Shipyard Limited under DRDO program for 'Technology Demonstration Vessel' being built for the first time in India.
3. India's first full carbon fiber light weight rapid deployable, heliportable bridge for military and disaster management applications developed along with DRDO.
4. Dorsal Unit for Airborne Early Warning & Control Systems (AEWACS) supplied to LRDE, Bangalore

Management/ Contact

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Founder & MD
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www.microninst.com



MICRON INSTRUMENTS
PRIVATE LIMITED

Micron Instruments

Pvt Ltd

Arming the Armed Forces

Light mechanical engineering company promoting export substitution

Company Brief

- Micron Instruments is a light mechanical engineering company with over 50 years' experience in development and manufacture of high precision products for Defence, Aerospace & Healthcare industries. Defence products include mechanical time fuzes, safety & arming devices, clockwork mechanisms & rockets for various calibers ranging from 23mm to 155mm. Aerospace products include actuators.

Achievements

- GE Quality excellence award in 2019
- BAE system supplier recognition award 2019
- GE Quality award for achieving DPPM < 500 in 2015
- Award for Export Excellence from Engineering Export Promotion Council

Technology/ Product Brief

- Manufacturing high precision mechanical time fuzes for various calibers including mechanical safety devices clockwork mechanisms and other ammunition products such as rockets for various calibers ranging from 23mm to 155mm, which are mainly import substitution items. Export of above items as IOP for Indian MoD orders and global supply chain.
- Management/Contact
- Col. S.K.Kaul
- microninst@gmail.com



Management/ Contact

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CEO
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www.micronel.net



Micronel Global Engineers

Sky is not the Limit

Hub for the latest Technologies and Applications

Company Brief

- Micronel Global prides itself on providing engineering solutions, nurturing talent, skills & innovation for executing complex and challenging projects using scientific knowledge and engineering expertise. The company provides multi-tech services with worldwide business partnerships.

Technology/ Product Brief

1. JET MX, a fixed-wing UAV with a lightweight modular composite airframe that can be configured to accommodate mission specific payloads, under Make-In-India for Indian Army requirement.
2. Servo Actuator
3. Servo Drives
4. Test Equipment
5. Flight motion simulator & Precision Centrifuge



Management/ Contact

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NFOTEC Digital Engineering

Pvt Ltd

Beyond the Horizon

Delivering Advanced Solutions for Low Observable Fighter Aircraft

Company Brief

- NFOTEC Digital Engineering Pvt Ltd (NDE) is a leading Bangalore Based Engineering Design Solutions company delivering CAE simulations for Aerospace, Automotive, Aeroengine, Turbo machinery and Naval applications.

Achievements

- Development and Implementation of Sonar Winch for NAVAL Helicopter together with NPOL, CEMILAC, and HAL
- Analysis of the Kaveri Marine Low Pressure Turbine Disc for Damage Tolerant Based Life Estimation
- Work packages of ADE DRDO for their UAV development Program
- Work packages of GTRE DRDO for their Aero engine development Program

Technology/ Product Brief

1. Currently Developing Manoeuvrable Expandable Aerial Target for the Indian Army in association with Micronel Global Engineers, Bangalore and L&T Defence, Mumbai
2. Design and Integration of Small Aircraft
3. Electro Magnetic Simulation for Aircrafts
4. Engineering CAE Solutions for Aerospace and Defence Sectors



Management/ Contact

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Om UAV Systems

Ruling the Skies

Proven efficacy with large range of Unmanned Aerial Vehicles

Company Brief

- OM UAV holds a GOI Industrial Licence to manufacture Mini UAVs. The company has a large range of 'Made in India' autonomous products with range up to 10km with a 10kg insecticide spray drone. OM has proven itself in many technical evaluations conducted by armed forces and prides itself on offering customized products.

Achievements

- Successfully demonstrated dropping of two grenades.
- OM's Mini UAV one of the first 'Made in India' products inducted by Northern command and still in use after 100s of sorties.
- Demonstrated Mine Sweeping using mini drone besides Autonomous 4 wheeled rover.

Technology/ Product Brief

- OM UAV Systems is a pioneer in unmanned mini aircraft technology with under 5kg takeoff weight. The company has solid technology to make custom mini UAVs for the customers. The company has core technology in the following major areas:
 - Mini UAV both multi rotor and fixed wing types
 - Custom Flight Controllers and Autopilots
 - Ground Control Station
 - Video and Data Links
 - Payload Integration and release
 - Crop Dusting Integration
 - UAV based mapping services
 - Training
 - After Sales support

Management/ Contact

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www.runflat.in



RUNFLAT Tire Systems

A grip on the Future

Solutions for ensuring vehicular mobility despite flat tires

Company Brief

- RUNFLAT Tire Systems helps provide vehicles with the capability to continue a journey for an extended distance despite having one or more deflated or damaged tires hit by Armour Piercing Rounds, Tire Blast or a Failure. They custom manufacture and export Runflat Inserts and Bead Locks for 4X4, 6X6, 8X8 & other Armored, Up-Armored & Special Purpose Vehicles from 3,000 - 40,000 Kilos Gross Vehicle Weights as per specific requirements.

Achievements

- Manufacturing and supplying to Army, Special Protection Groups, Para Military Forces, Police departments and Armoured vehicle manufacturing OEMs.
- RUNFLAT Inserts comply with FINABEL Standards and can be customised as per specific end user test requirements
- Ballistic tested with armor piercing rounds at H.P White Laboratories, USA and other end users.
- Load Testing done at Taiwan Rubber Research & Testing Center, TAIWAN

Technology/ Product Brief

- Runflat Systems
- Runflat Inserts
- MPV Runflat Systems
- Bullet Proof Tires



Management/ Contact

Venkateshwar Rao
Japala
sales@runflat.in, vjapala@yahoo.com



SLN Technologies

Pvt Ltd

Leading the Charge

Introduced some of the best technologies and equipment to PCB and EMS industry in India

Company Brief

- SLN is an Electronic Systems Design & Manufacturing Company with AS9100D certification, specialized in Build-to-Specification and Build-to-Print solutions to Aerospace and Defence Industry over two decades. Product Domain Expertise in Avionics LRUs, ATEs & RADAR Antenna Control Systems. SLN is a CEMILAC approved Design Organisation.

Achievements

- SLN was awarded 1st prize for "Excellence in Research and Development for the year 2007-08" by ELCINA –DUN & BRADSTREET

Technology/ Product Brief

- SLN has Indigenously Designed and Developed
 - Solid State Flight Data Recorders (SSFDR) for Su-30MKI fighter Aircraft and LUH
 - ATEs to Test Avionics LRUs
 - Antenna Control Systems to around 10 different types of Radar Platforms
 - Universal Flight Data Acquisition and Analysis System to IAF
 - Audio Interface Units

Management/ Contact

D R Subramanyam,
Managing Director
drs@slntech.com



Solid State CVFDR for
Rotary Wing Aircraft (LUH,
LCH & Mi-17)

SMPP

Pvt. Ltd.

Protection with Precision

From Bulletproof vests and helmets to Combustible Cartridge cases



Company Brief

- Founded in 1985, SM Group of Industries is India's pioneer in development of very crucial technologies for vital Defence products (Ammunition and Ballistic Protection) and in finding highly innovative solutions in some of the most challenging areas in defence production.
- One among the very few companies in the world and only one in India to manufacture mission critical products like Combustible Cartridge cases.

Achievements

- National Award for Excellence in Indigenisation of Defence Stores by Ministry of Defence, Govt. of India.

Technology/ Product Brief

- Bullet Proof Jackets / Ballistic Vests
- All designs with protection against all kinds of ammunition conforming to NIJ Level III, III SP and IV (i.e. 7.62x51MM NATO Ball, SS109 / 5.56X45 MM , 7.62x39 MM, 7.62x 54 MM B32 API, 7.62x63 MM .30 Caliber M2AP etc.)
- Bullet Proof Helmets / Ballistic Helmets
- PASGT/ ACH/ MICH/TCH Designs with all accessories for ballistic protection of Level IIIA and also 7.62x39 MM Hard Steel Core rounds
- Ballistic Shields
- For Protection of Level IIIA, III, III SP and IV



Management/ Contact

Dr S C Kansal, Chair-
man and MD
[contact@smgroupin-
dia.com](mailto:contact@smgroupin-
dia.com)

www.timetooth.com



Timetooth Technologies

Pvt Ltd

Designing the Future

Complete product development including design, engineering, manufacturing, testing and certification

Company Brief

- Timetooth is a leading engineering solutions firm in India serving global clientele with two groups:
 - I. Engineering and Design Services (EDS)
 - II. Aerospace and Defence Products (ADP)
- Timetooth creates and supplies world-class, customized products that consistently meet aggressive performance targets and stringent regulations involved in Aerospace and Defence sectors.
- The company has successfully delivered on mission critical systems of prestigious national programs with complete product development activities including design, engineering, manufacturing, testing and certification.

Achievements

- Chosen as vendor-partner in the RUSTOM II program

Technology/ Product Brief

- SPECIAL PURPOSE BLAST RESISTANT SEAT FOR MINE PROTECTED VEHICLES
 - Extremely high shock levels of about 120g input had to be attenuated to 20g by energy ab-sorption mechanisms.
 - Occupant safety criteria on Head, Neck and spine injuries had to be cleared for design to work.
 - Seat design manufactured by vendor and tested via special 10m drop tower tests at ARAI, Pune with dummy instrumented occupants for data logging.
 - First Time Right design! – Approved and absorbed as a new technology for the FICV pro-gram.
- HIGH ACCURACY MOMENT OF INERTIA, AND CENTRE OF GRAVITY MEASUREMENT MACHINES
 - High accuracy properties measurement machines of critical performance objects Special Flexible Pivot mechanisms leveraged for accuracy improvement and space saving compared to traditional trifilar pendulums.
 - Mathematical modeling for detailed sensitivity studies done.
 - Special rigs for object handling, low friction bearings and mechanisms leveraged Rugged electronics used with easy to use displays and report generation.

Management/ Contact

Girish Mudgal, Co-founder & Executive Director
Amitav Chaudhuri, Co-founder & Executive Director
info@timetooth.com



Zeus Numerix

Pvt Ltd

Defending the Nation with Innovation

Leading the way with R&D and customised solutions

www.zeusnumerix.com/



Company Brief

- Zeus Numerix Pvt Ltd (ZN) is a Know-Why company & certified R&D MSME in the field of Defence, Mechanical and Electro-Mechanical systems. ZN is certified by Center for Military Airworthiness and Certification (CEMILAC) Govt of India for design approval of airborne objects. ZN has experience in 200+ defence projects.

Achievements

- First DST-FICCI-Lockheed Martin India Innovation Growth Medal
- CEMILAC certification as Design Approval Company
- Zeus was key partner in BrahMos Su-30 integration. It saved substantial Forex and made the forces more potent.
- Similar work done for integration of 10 more bombs/Missiles.
- Contributed in redesign of artillery gun, floatation of BMP, stealth increase of ship etc.

Technology/ Product Brief

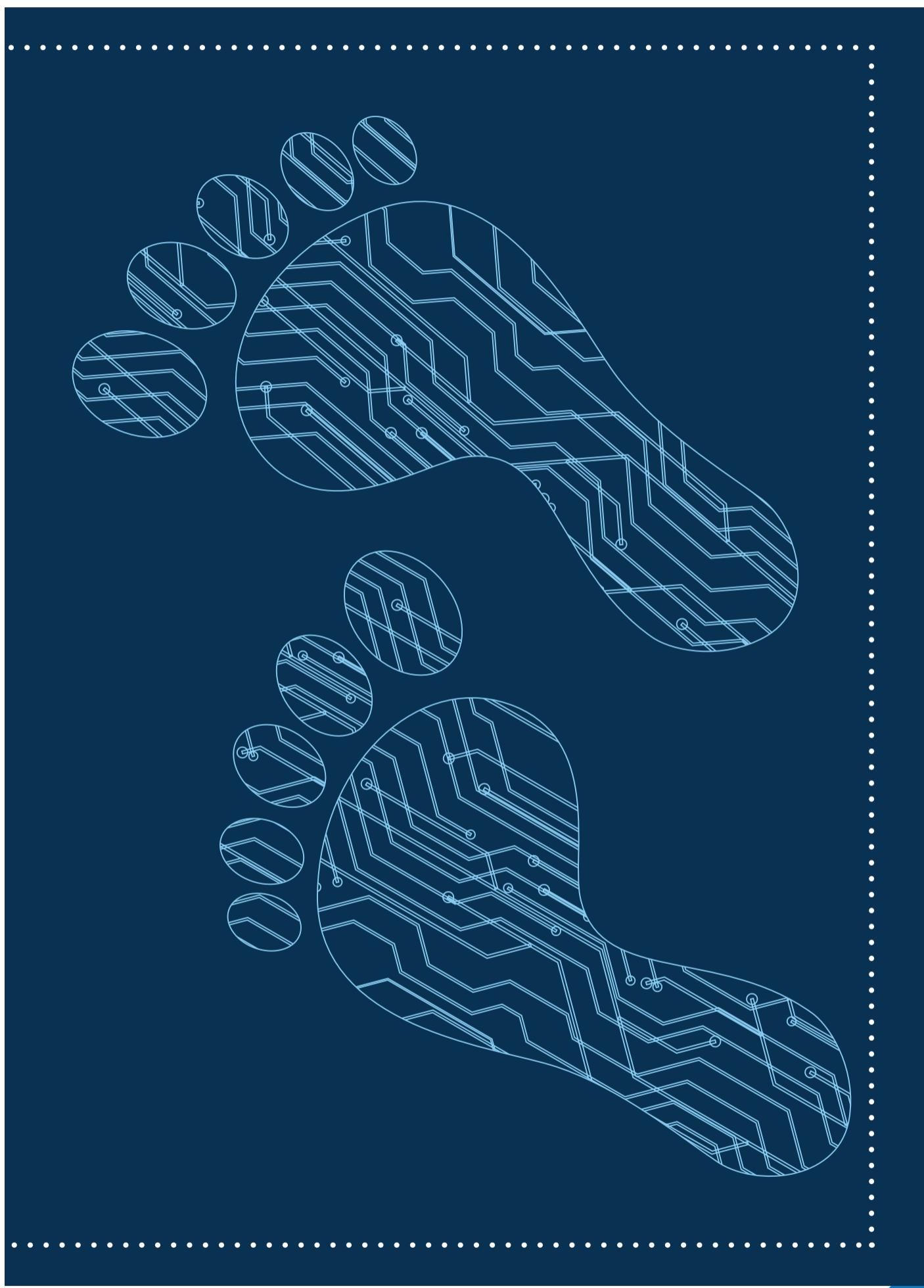
- Build-to-Specifications (Composite, Mechanical, Electro-mechanical), Design Approval Studies, Engineering Simulation Services (CFD,FEM/ FEA, CEM), Custom Software Development.



Management/ Contact

Abhishek Jain
abhishek@
zeusnumerix.com

START UPS





AGREX TECHNOLOGIES

Private Limited

Security and Surveillance through Artificial I

Power of AI and Video Analytics as force multipliers for situational awareness

Company Brief

- Manufacturing Artificial Intelligence based Surveillance software for Video Analytics to improve safety and security of campuses, borders and cities.

Achievements

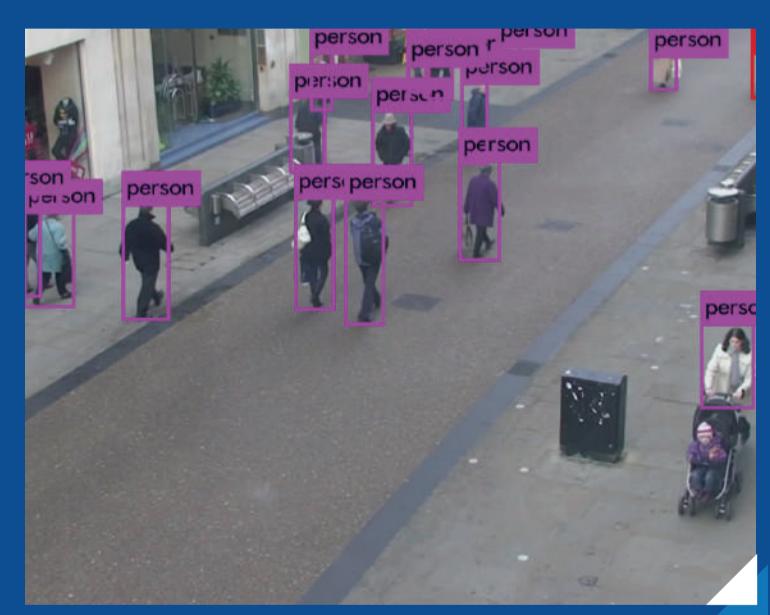
- Founder Arush Kakkar recognised as 25 most influential founder under the age of 25. Invited for multiple talks across the world on Artificial Intelligence including TED talks.
- Major customers include Indian Army, Border Security Force, Central Reserve Police Force, Chennai Police

Technology/ Product Brief

- Proprietary Artificial Intelligence technology with multiple applications including Face Recognition System, Border Intrusion and Management System, Satellite Imagery Analysis and Enhancement, Suspicious Behaviour and activity recognition system, Missing Children Recognition, Weapon Recognition, Crowd Monitoring, Drone monitoring, Automated and Remote Weapon Station.

Management/ Contact

Arush Kakkar
Founder & CEO
arush@agrexai.com



www.ajnalens.com



AJNALENS

by Dimension NXG

AI powered Augmented Reality for the Defence Sector

Strong indigenous AI and AR capabilities which are the future of warfare

Company Brief

- AjnaLens designs products which enhance human capabilities and are simple to use to help people make decisions with the information in hand. Their AR/VR headset is designed to augment human intelligence so that people can realize their full potential.
- AjnaBolt is a world-class artificial intelligence powered system that not just upgrades current defence equipment but also provides Augmented Reality Head-Mounted Display (AR HMD) to make India ready for the future of warfare.

Achievements

- Indian Augmented Reality Headsets Technology Innovation Leadership Award - Frost & Sullivan
- ELCINA defennovation Award 2019 for most promising startup (Defence Innovation Award)
- Winner of IOT Startup of the year - The AEONIAN 2018
- Winner of iDEX - Ministry of Defence, 2019
- Top 15 innovative startups globally - Outlook Business, 2018

Technology/ Product Brief

- AjnaLens Product Applications
- Situational Awareness system for Military vehicles
- AR guided Assembly, Maintenance & Repair
- Holographic Mission Planning
- On-field and Off-field Mission Holographic Training
- 3D Holographic calling (Digital Teleportation)
- AI & AR-assisted SWAT Operations
- Upgrade for Equipment & Missiles, Military Vehicles, Warehouses & Factories
- Smart Military Helmet



Management/ Contact

Pankaj Uday Raut
CEO
hello@ajnalens.com

www.anabattlefieldsystems.com

ANABATTLEFIELD

Systems Pvt Ltd

Built for the Soldier in the Battlefield

Helping identify threats well before the battle



Company Brief

- Starting as an electronics manufacturer, the company began with the dream of building cost effective products for the defence. The idea was that every soldier should have the winning edge by knowing his position in the battlefield and that helps in precise communication. This offers tactical advantage, especially if the soldier knows the type and area of intrusion of the enemy.

Achievements

- ASSOCHAM Startup Excellence award runner up

Technology/ Product Brief

- Akhyana Soldier system
- ANABATTLEFIELD System's Akhyana Soldier System is integrated with multiple sensors and signal level fusion is done. The AI adjusts according to environment. It measures the distance from the threat, and sends an alert. It can also plot the image of the object and at the battlefield when the soldier is running out of a battery, then the attached smart load system computes the consumption of the load and tells the soldier exactly which load is required.

Management/ Contact

Rajeshwari Chinagudi
r.chinagudi@anabattle-
fieldsystems.com



www.arsenalcorp.biz



ARSENALCORP ROBOTICS

Private Limited

The Scientific Route for Security

Customized and cost effective solutions based on AI and AI enabled services

Company Brief

- ARSENALCORP or better known as AC has flourished with excellence in Air, Land & Sea within the UAV/ Drone Segment. Under the guided supervision of India's renowned scientists, their team has been focusing on ultimate efficiency and productivity through cost effective solutions for AI and AI enabled services. This has given them a reputation to design and conceive reality based robotic products within the Drone segment.

Achievements

- Director Manu Mathew recognised as 'The Top 30 Influential Business Leaders to Watch in 2019'.
- Arsenalcorp recognised as Top Drone-UAV Startups in India by Tycoonstory.
- Nominated as Top 10 Aviation & Aerospace Engineering Companies in India for 2019 by the Industry Outlook.
- Nominated as Top 10 Best Engineering Services Companies 2019 by CEO Insights Magazine.
- Nominated as Company of the Year 2019 (Aerospace) by SiliconIndia.

Technology/ Product Brief

- UAV, UGV, AUV/ UUV, Anti Drone, Armoured Vehicles (APC/ICV)



Management/ Contact

Pankaj Uday Raut
CEO
hello@ajnalens.com



ASTRA RAFAEL COMSYS

Pvt Ltd

Transforming the Airwaves

First private sector D & A Company manufacturing SDRs under Make in India

Company Brief

- Astra Rafael Comsys Pvt Ltd (ARC) is a Joint Venture (JV) company formed between Astra Microwave Products Ltd, India, and Rafael Advanced Defence Systems, Israel, engaged in specific areas of Defence Electronics.
- The ARC plant is equipped with state-of-the-art manufacturing set-up with 8000 sq.ft. Class-1000 Clean-rooms and special areas using Class-100 Laminar Flow Stations. A world class Reliability Testing facility also has been established to meet military standards with special equipment.

Achievements

- ARC is currently manufacturing & implementing the indigenization process for delivery of NETCOR Software Defined Radio (SDR) to Indian MoD (IAF), with technology transfer.
- ARC is the first private sector D & A company manufacturing SDRs under Make in India at its plant in Hyderabad.
- ARC to develop, produce and integrate high-end digital communication systems including a wide range of technologies and products like SDR, ESM technology and Cognitive Radio.

Technology/ Product Brief

- BNET is a unique Software Defined Radio & network architecture enabling the future of digitized warfare by delivering wireband with low delay and reliable connectivity. By simultaneously receiving and processing hundreds of MHZs and merging them into a single IP, BNET gives unprecedented network capacity. ARC manufactured state of the art Software Defined Radios (SDR) under the BNET Family:
 - BNET IP Radio
 - BNET Handheld Broadband IP Radio
 - BNET Manpack System Broadband IP Radio
 - BNET Vehicular Broadband IP Radio

Management/ Contact

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Sonnapureddy Gurunatha Reddy, Director
sgr@astramwp.com
Maram Venkateshwar Reddy, Director
mvr@astramwp.com

www.astrome.co



ASTROME TECHNOLOGIES

Innovating with Milimetre Wave Technology

Developing tomorrow's communication solutions

Company Brief

- Astrome's vision is to develop innovative indigenous technologies that will act as a catalyst to bridge the digital divide. To realize this, they have developed and patented an innovative wireless mmWave communication technologies for both terrestrial and satellite applications.
- They are developing cutting edge, future-ready, military grade communication solutions to the Indian Armed forces. The solutions are based on our innovative millimetre wave technology achieving Multiple-Point-to-Point communication. They are a startup incubated at IISc, Bengaluru.

Achievements

- Won the Most Scalable Solution at ITU Telecom World Conference 2019
- Won National Award in "Technology Startups Category" in 2018 from Dept of Science & Technology, Indian Govt

Technology/ Product Brief

- GigaMesh (mmWave Secure Tactical Network)
- A single GigaMesh device can provide up to 40 highly secure narrow beams with 2+ Gbps capacity each, communicating upto a range of 10 kilometers.



Management/ Contact

Dr Neha Satak, Co-
Founder and CEO
Dr Prasad Bhat, Co-
Founder and CTO
Siddhey G Shinde
gigamesh@astrome.co



AutoMicroUAS Aerotech

Taking Drones to new heights

One of India's foremost Drone companies

Company Brief

- AutoMicroUAS Aerotech's focus is developing advanced products for use of International Market, Indian Armed Forces, Paramilitary forces, Dept of Agriculture & Mining in the surveillance, counter terrorism agriculture & geo imagery. The company manufactures Remotely Piloted Aircrafts / Hybrid Vehicles and Complete systems, with Software to manage, control and command these systems.

Achievements

- Skoch Awards for Swarm Drones And MALE (Medium Altitude Long Endurance)
- Best Innovation of the year by Chief of the Air Staff Indian Air Force 2018
- Founder Sqd Ldr (Retd) Varsha Kukreti was on the Jury for the first ever Drone Olympics of India conducted during Aero India 2019.

Technology/ Product Brief

- AMUAS manufactures VARGUS FW106 - a Remotely Piloted Hybrid Fixed Wing Aircraft, Vargus 2M - a Rotary aircraft with multiple and varied Payload carrying capacity, A tether Drone along with the Data Link and auto pilots.
- The company's core strength is experience in the industry, advance technology understanding and a good infrastructure with latest machinery & experienced technical team delivering the systems.

Management/ Contact

Sqd Ldr (Retd) Varsha Kukreti
Vinoth Augustine
Gp Capt (Retd) Malliyakel Joseph
contact@automicraus.com



www.axiobio.com



Axio Biosolutions

Private Limited

Revolutionary Bleeding Control technology

Biomaterial devices for trauma on the field

Company Brief

- Axio Biosolutions is a medtech company focused on novel biomaterial-based devices for management of trauma, surgical and chronic wounds. Its flagship product, Axiostat is an FDA 510k cleared, CE approved hemostat made of 100% chitosan that controls moderate to severe bleeding within minutes.

Achievements

- MedTech Innovator Asia Pacific (2019)
- Medicall: Silver Award
- Made in India Innovation Awards (2018)
- BioAsia Best Emerging Startups (2016)

Technology/ Product Brief

- Axiostat
- Hemostatic dressing which stops moderate to severe bleeding within minutes.
- Sterile and ready to use: 5x faster than gauze
- Painless removal, Works on patients on anti-coagulants
- USFDA, CE approved
- Axiostat is deployed with armed forces across India
- Used by Para commandos during the surgical strikes of 2016 to save the life of a commando



Management/ Contact

Leo Mavely, Founder &
CEO

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Big Bang Boom Solutions

Private Limited

Effective Solutions for the Modern Armed Forces

Innovating for high quality and cost-effective ideas

Company Brief

- Big Bang Boom Solutions (BBBS) is a deep tech defence solutions integrator, with a core focus on developing indigenous intellectual property.
- Their Boron Nitride based Hybrid Personal Combat Armor involves a low temperature and low-pressure technique which not only helps in cutting down the manufacturing time but also reduces the manufacturing costs drastically.

Achievements

- Recently won the prestigious SKOCH award for their Hybrid Personal Armor
- The only start up in India to have won two iDEX challenges floated by the Indian Ministry of Defense (MoD)

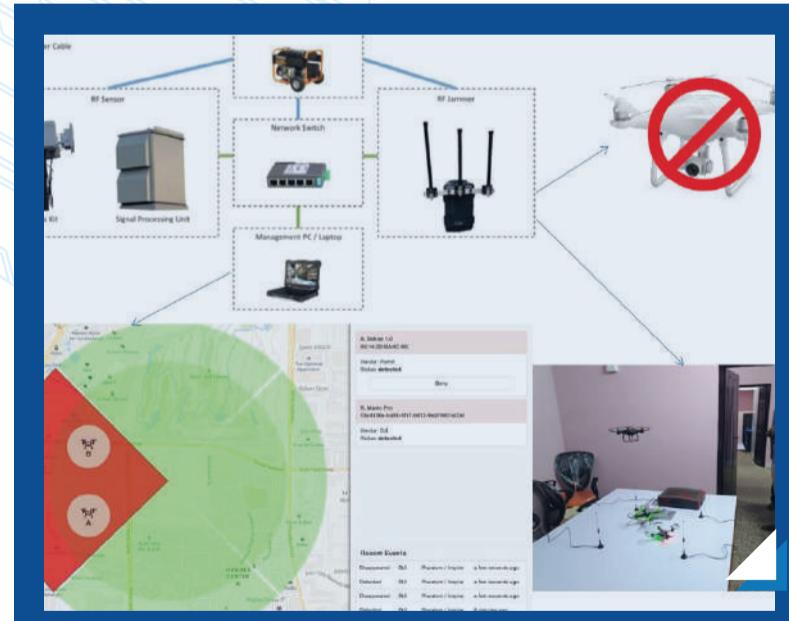
Technology/ Product Brief

- 360 Advanced Battle Interface (ABI)
- Uses multiple cameras & sensors to produce a 360 degree view synced to an Augmented Reality helmet, allowing soldiers to 'see through' the tanks in real time.
- Anti-Drone Technology
- Uses multiple analysers, integrated with army radar detection systems, that simultaneously sample multiple frequency bands with a 99.9% detection rate of rogue drones.
- Next Generation Armour
- 8 times lighter in composition than the one in existing armours

Management/ Contact

Dr. Shivaraman Ramaswamy
shiva@bigbangboom.solutions

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www.bigcatwireless.com



BigCat Wireless

Pvt Ltd

Driving Wireless Infrastructure Solutions

Developing SDR for Tactical situations

Company Brief

- BigCat Wireless specializes in developing Wireless Infrastructure products that range from 5G Base Stations, SDR Platforms, Power Efficiency Solutions for Wireless infrastructure and Tactical Communication devices for Indian Armed Forces.

Achievements

- Common SDR based platform to pioneer various solutions from Manpack to AFV, Tactical, Smart Cities, IoT, 5G.

Technology/ Product Brief

- 4G/LTE Tactical LAN with MANET, Wireless Monitor and Recorder, 5G Small Cell
- With MANET, Smart Beamforming and adaptable Radios, BigCat Wireless is pioneering technological solutions that will enable competitive advantages to Indian Armed forces for many years to come.
- Strategic intelligence/ Electronics (C4I2SR)
- BigCat Wireless is focusing on developing SDR based Communication systems that will enable Indian Armed Forces to gain decisive advantages in Tactical Situations.



Management/ Contact

Kannan G
kannan@bigcatwireless.com

Constelli Signals

Private Limited



Redefining Radar Technology

Ensuring the safety, integrity and quality of radars used in Electronic Warfare

Company Brief

- Constelli works on leading technologies in Signal Processing solving problems in Defense, Aerospace and Commercial fields. They offer Radar systems like Radar Threat Emulator IP and Radar Target Simulator IP – both up to 1.5GHz instantaneous BW, with multiple Threats and Parameters. Constelli Radar Toolkit (CRTK) is their extensive library for Radar Design, Simulation and Prototyping on LabVIEW HOST and FPGA platforms. They also offer Telemetry Products like Dual Channel IF & RF Digital Telemetry Receiver, built as per IRIG Standard.

Achievements

- Winner of Defence India Startup Challenge - II (DISC2)
- Developed the first indigenous Digital Telemetry Receiver

Technology/ Product Brief

- Digital Telemetry Receiver
- The S-band receiver supports AGC, AM Tracking, Diversity Combining, Equalization, PCM-FM & SOQPSK-TG Demodulation, Bit-Frame Synchronization, LDPC/ Convolutional Decoding and TMoIP as per IRIG Standard
- FMCW Altimeter Test System
- FMCW Altimeter Test System is for FMCW Radar testing with multiple target scenarios, extendable to L, S, C, X, Ka & Ku bands
- Radar Toolkit
- Constelli-RTK is a holistic solution for Radar test, design, prototype & simulation needs with functions for radar Signal generation, Measurements and Target Generation on LabVIEW FPGA.

Management/ Contact

Satya Gopal Panigrahi,
Founder & CEO
satya@constelli.com



www.cronsystems.com

CRON Systems

Pvt Ltd

Innovating with IoST

Aim to become world's leading providers of technology driven situational awareness solutions

CRON
SYSTEMS

Company Brief

- CRON Systems is a CISCO, Techstars and venture capital (Yournest) backed technology company using Internet of Security Things (IoST) to build innovative situational awareness platforms. Their solutions are developed combining best technology, deep understanding of end-user pain points and bespoke products and solutions. They deliver nonpareil situational awareness solutions using Smart Fusion Technology which has the capability to detect, track movement and classify it into various profiles.

Achievements

- Business world 40 under 40
- Invited by PMO to Singapore

Technology/ Product Brief

- Enabling 3D sensing using multiple sensors with proprietary edge computing Hardware and software which brings vision from spacial data. This enables self-driving cars and other technology.
- It also allows replacing physical monitoring using 3D sensing to provide actionable insights. The technology is currently being tested to provide vision to large trucks to move in zero visibility with collision and attack avoidance systems.



Management/ Contact

Vaneet Chhabra
[Vaneet@cronsystems.
com](mailto:Vaneet@cronsystems.com)

DEFEQ HIND ARSENAL

Pvt Ltd

Modernization with Indigenization

Driving 'Make in India' through innovative solutions

Hind
Arsenal

Company Brief

- DEFEQ HIND ARSENAL is a defence sector startup recognized by Department for promotion of Industry and Internal Trade (DIPP), Government of India. Their deep passion for nation building and unprecedented possibilities in India's Defense & Aerospace sector conceptualised Hind Arsenal's foray into the business.
- They aim to provide the Armed forces and friendly nations Arms and Ammunition, its support components and Air-borne early warning systems for keep security of the nation continuing their troop trainings and military uses, with "Indigenous" cutting-edge technology.

Achievements

- Nominated for India 500 Startup Awards

Technology/ Product Brief

- Aiming to establish a small and medium caliber ammunition production facility and early warning missile detection system in India.
- In developing stage of early warning air defense system with best of our resources.
- Conduct trials on Defense optic systems for aiming solution with most indigenous contents.

Management/ Contact

hindarsenal@gmail.
com
mohit@hindarsenal.
com

www.dronestechlab.com



Drones Tech Lab

(A unit of RC Hobbytech Solutions Pvt Ltd)

Stepping ahead with Cutting Edge solutions

Providing the Forces with the right tools for Surveillance

Company Brief

- System integrator in unmanned surveillance industry leveraging hardware, software and data analysis systems. We design off the shelf solutions using drones and other unmanned systems that can be implemented in multiple scenarios with minimal customizations.

Achievements

- Winner - Start Up India Fund - Balmer Lawrie & Co Ltd
- Winner - IIT Mandi Himalayan Innovation Challenge
- Skoch - Among India's Top 100 SMEs
- Winner - Ideas to Implementation IIM Calcutta

Technology/ Product Brief

- Micro drones equipped with sensors capable to perform in extreme weather conditions
- Automated UAVs with GIS mapping to survey areas that are inaccessible to humans and collect geo tagged images with up to 30x zoom



Management/ Contact

Ritesh Kanu
ritesh@dronestechlab.com



Dronix Technologies

Private Limited

Next Gen Drone Systems

Providing end-to-end Drone solutions

Company Brief

- Aero360, the brand name of Dronix Technologies Private Limited, is the pioneer in Drone-based solutions in India offering a range of applications in Defence, Security and Enterprises for improved decision-making while reducing costs, saving time and improving safety.
- Aero360 builds advanced Drones for Indian Defence forces for surveillance and security related applications. We provide Nano, Micro, Small and Tethered UAVs/ Drones for ISR, Search and Rescue missions etc. Our drones helps Conduct effective missions at reduced risks. Our drones help our forces with Intelligence, Surveillance, Target Acquisition, Reconnaissance, Border Patrol, Battle Damage assessment and Communication relays.

Achievements

- One of the top 5 Drone companies in India by Techworld Top
- Selected for best drone project in the Geospatial World Excellence Awards 2019

Technology/ Product Brief

- Micro Drone
 - Visual & Thermal vision
 - 4K Ultra HD Video
 - 3X Optical 2X Digital Zoom
 - Easily portable
- Tethered Drone
 - 8 + Hours Flight Time
 - Visual & Thermal Vision
 - Water Splash Resistant
 - 30X Optical Zoom



Management/ Contact

A Pragadish Santhosh,
Director
sales@aero360.co.in

<https://www.facebook.com/pages/Defence-and-Space-Robotics-Laboratory/1170224063099079>



DSRL

CONTRIBUTING TOWARDS PROVIDING EDGE TO INDIAN ARMED FORCES.

Company Brief

DSRL moves forward with a vision to niche the most advanced robots on the planet which will drastically heal and liberate humanity from its sufferings and create a new order to tune with the nature's grand design. The company's mission is to create a close-knit passionate pool of individuals and align its forces for the collective good of all the living beings on the planet through science.

DSRL aims at delivering a robot which will aid our armed forces in getting the first hand information in the frontline of the battleground which will reduce casualties. It will even aid our army in places like siachen where patrolling of border will be much easier and other strategic places. It can be remotely operated from a safe place and also our handicapped army personnel can operate it without any difficulty which will

Technology and Product Brief

An adaptive and flexible wheel for planetary exploration rovers.
A multifunctional science end effector and a manipulator for Martian rovers.

A bioinspired quadruped robot for walking and climbing on variable terrain



Management/ Contact

Arnab Kumar Barman
(Founder)

Kaustabh Kiran Deka
(Co-Founder)

www.eadicct.com



Eadicct Mobility Solutions

Private Limited (OPC)

Solutions for Personal Mobility

Creating a global footprint for Green Technologies

Company Brief

- A Technology start up, focusing on providing solutions in the field of personal mobility. Eaddict sells electric bicycles and conversion kits, electric wheelchairs, etc. They have currently developed an indigenous Power Train for two-three wheelers. They also offer solutions to convert existing powerful vehicles in defence like Maruti and Jonga into electric vehicles and use them for next 10 years.
- Currently, for electrification, Indian Supply chain has a gap of tier 1 & 2 suppliers especially for power train. Eaddict is keen to provide a solution which can be locally manufactured, can work for new products as well as refurbishment of old ICE vehicles- instead of scrapping old vehicles, same could be refurbished to make it green and clean.

Achievements

- Best Innovation Award in Samwad 2017
- Most Popular Start Up Award - SEAP Pune 2016

Technology/ Product Brief

- Electric Power Train for Bicycle (Pedal Assist, Walk Mode, Cruise Mode and Throttle Mode)
- Electric Power Train for two-three wheelers- scalable for 4 wheeler
- Light weight
- Higher efficiency
- Reliable and Sustainable
- Lower Cost



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Management/ Contact

Ashutosh Gawade, Executive/ Manager- Business Operations
ashutoshg.eadicct@gmail.com
eadicct@gmail.com

Fence India Industries

Pvt Ltd

Fencing for the Future

Comprehensive Perimeter Security Solutions

Company Brief

- Fence India Industries Private Limited India Fence is one of the leading manufacturers and suppliers of perimeter fencing made of iron and steel. They provide a complete suite of fencing products to India and beyond.

Technology/ Product Brief

- 358 High Security Fence
- India Fence has made 358 High Security Fence that is Anti-Climb and Anti-cut to protect Indian Borders and Garrisons



Management/ Contact

Ankit Bajaj
ab@indiafence.com

www.infiivr.com



InfiVR

Channelling the Future with AI

AR & VR for Simulations training

Company Brief

- InfiVR provides cutting edge Virtual Reality Training and Simulations. They pride themselves on their simulations that are highly cloud data enabled with deep tech AI, which they feel distinguishes them from their competition.

Achievements

- Best 10 AR / VR Startup Silicon India
- Best Idea Startup - Karnataka Govt.
- Best 10 Innovation Startup - MAIL Maruti Suzuki

Technology/ Product Brief

- Virtual Reality and Augmented Reality based Platform for Simulations and Training
- InfiVR can build simulations of environment with Cloud Data like Natural real Terrains, Seismic Data, etc. which is powered with AI and ML for deep sophisticated scenario simulations.



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Management/ Contact

Pankaj Uday Raut
CEO
hello@ajnalens.com



Innpharx Research

Private Limited

Biopharmaceutical Innovation for the Modern Soldier

Innovative products for unmet medical needs

Company Brief

- INNPHARX Research is a privately held, research-based biopharmaceutical company. They develop high-quality, innovative biopharmaceutical products and medical devices for military and general applications.
- Their innovative hemostat kits are durable, highly stable, cost-effective, biodegradable and easily applicable in the battlefield. Provide hemostasis against a wide range of battlefield injuries like surface cut wounds, difficult to stop vascular wounds and deep bullet shot wounds.

Technology/ Product Brief

- Quick Stop Hemostat Kit
- - Provide hemostasis against a wide range of battlefield injuries and emergency wound bleedings.
- - Fast-acting, cost-effective, stable, and easy to carry in the soldier's pockets and accommodate in any small general emergency kits.
- - Saves the life of patients/soldiers in the critical bleeding stage and protects the wounds from infections.
- - Easily removable and biodegradable in the environment.

Management/ Contact

Dr. Muthukumar. A,
Director - Research &
Technical Affairs
contact@innpharx.com





Inoviea Consulting and Services

Ship Structural Design & more

Company Brief

- Inoviea is a technical management, marketing consulting and services company operating in the fields of IT, Marine, Solar, Infrastructure, Real Estate, Social Enterprise, Policies & Reforms.

Achievements

- Developed India's first E-boat launched by PM Modi on 01st May 2016
- Installed Hybrid Rooftop Solar System in Noida, with highest power generation of 5.25 units per Kw annual average in the country
- Among top 3 of 216+ applicants for CII Startupreneur Awards 2018 in services category
- Nominee of Most Innovative startup of the year 2019 by Entrepreneur India magazine

Technology/ Product Brief

- Ship structure design using Maestro
- Solar Power Plant Design and Waterless Solar panels self-cleaning system
- Mobile App Office Management system
- Harmless Dog Guard



Management/ Contact

Cdr (Retd) Suchin Jain,
Founder Director & CEO



lvlAlpha

Revitalising Defence Tech

Battlefield Analytics to save lives

Company Brief

- lvlAlpha is an Early Prototype Stage Defence Tech company solving the problem of High Risk Environment Personnel in distress to disaster Scenarios, we believe our Wearable IoTs Environment will be the Single Platform, in the next Decade, for Navy, Air-Force Crew, Terrestrial Forces and Commercial Crew.

Achievements

- Incubated at Atal Incubation Centre, Mumbai under Niti Aayog
- Accelerated by TBI-Bhubaneswar under Department of Science & Technology
- Top 50 Startups at Def-Connect 2019
- Top 4 Startups at CII West-Tech Summit, 2019

Technology/ Product Brief

- HadEON™ and ArchEON™ series Wearable devices providing Critical health Monitoring
- Personnel Critical Health Monitoring increases identification and Golden Period Survival in Injury Scenarios
- BioIDMarker™ based Real-time Location Tracking for Extreme work environment personnel
- Huge Reduction in Friendly Unit Misidentification for Joint Command Operation on Battlefront
- Real-time Tracking of Secured location
- Dynamic Assets help define On-The-Ground Secured Frontline

Management/ Contact

Aditya Mishra,
Managing Director
contact@lvlalpha.com



www.ksdtechnology.com



Kavach Secure Dynamic Technology

Pvt Ltd

Adding the Tech Edge

Specialising in Defence and Sea-based radars and systems

Company Brief

- Kavach Secure Dynamic Technology Pvt Ltd is an upcoming firm in technology and innovation specializing in defence, security and civil markets throughout India. With an overseas champion team player like secure communication systems who has history of innovation spanning for years, KSD provides state-of-the-art electronics, mission systems integration and other capabilities in the areas of command, control, communications and intelligence systems along with a range of mission support services.

Achievements

- INNOEX 2016 (Aviation Innovation Exposition)

Technology/ Product Brief

- KSD Anti Drone Technology
- Heavy Machine Gun Sight System – HMGSS
- Command Control System



Management/Contact

Nirav Patel,
VP Business
Development (Founder)
Alkesh Patel,
Director of Technology
(Co-Founder)



Lotus Antennas and Microwave Technologies

Pvt Ltd

Frequency to the Future

Producing cutting edge RF and Microwave products

Company Brief

- Lotus was founded in 2013 by Group of professionals who are experts in Defence and Space products with an overall experience of 100+ years. Right from 2013, organization has been preferred vendor at various defence and Space labs and also been recognized as high contributing vendor. ISO 9001-2015 Certified company RF and Microwave products for Defence and space sector for Missile, Radar, Telecomm, Test & Measurements & Other Scientific applications.

Achievements

- Developed indigenous Products for Missile application

Technology/ Product Brief

- All Type of Antennas (From 20MHz-40 GHz)
- Defence, Space, Telecom and Satellite communication (Active & Passive)
- Subsystems like (From 20MHz-40 GHz)
- Transmit /Receive Modules (TRMs)
- Power Amplifiers (PAs), LNA, Power Dividers, Directional Coupler, Band pass Filter, RF Detector
- Manufactures of RF and Microwave Products like

Management/ Contact

T.V. Dasaratha Rami
Reddy, Executive
Director
[dasarath@lotusamt.
com](mailto:dasarath@lotusamt.com)



M19- Material Intelligence Lab

Riding the Indigenous Wave

Material Research to meet India's 21st Century needs

Company Brief

- M19 lab is a leading company that has successfully developed indigenous high-end scientific machines for advanced material characterizations.
- Through a combination of indigenous high-precision machines and advanced lab, M19 aims to create advanced material that enables significant changes in maneuverability (mobility/speed/agility) and force protection (from nuclear/chemical/biological and active defense).
- Achievements
- M19 lab team awarded tax-free lab facility by New York Governor to setup 1st Oversees "Advanced Material Characterization" laboratory facility
- Gujarat Govt. grant for Innovation in Scientific Laboratory Technology
- Technology/ Product Brief
- Advanced material testing of Military fabrics for chemical and Biological warfare, Parachutes, advanced filtration, and soldier protection wear.



Management/ Contact

Dr. A.S Dey, Managing Director
Mr. Swasti Dey, Founder & CEO
support@m19.io

Manastu Space

MANASTU SPACE

World's most efficient Satellite Engine and Fuel

Changing the way we explore Space and beyond

Company Brief

- Manastu Space dreams of making the world a better place by finding solutions for replacing toxic Satellite fuel. Fuel used in satellites today is toxic and has resulted in several deaths. Europe and US governments are planning to ban this fuel by 2021. Also being low performance, more fuel is needed making satellites heavier and the whole process becomes more expensive.
- They are building the World's most efficient (25% higher) Satellite fuel and engine which they guarantee is as safe as common salt. This can save satellite manufacturers up to 30% of launch cost. Imagine earlier satellites of 2 ton would cost \$40M in a launch and with their fuel and engine, it weighs 1.5 ton and costs \$28M. Thereby saving 0.5 ton and \$12M in launch cost.

Achievements

- India Innovation Growth Program by DST Lockheed Martin
- Dare to dream by DRDO
- S-Booster by Japanese Government and JAXA

Technology/ Product Brief

- Complete Propulsion System to Satellite manufacturer including fuel, engine, tank, accessories, etc.
- Manastu's innovations include new fuel, new engine and new catalyst, the heart of this engine.
- 1. Highest efficiency (25% more) in the World, Safest, Cheapest Unit Propulsion System (60% cheaper)
- 2. Developed an engine for smooth and complete combustion
- 3. To start ignition, they have developed ultra-high-temperature ceramic catalysts that works for import substitution.

Management/ Contact

Tushar Jadhav, Co-founder & CEO
Ashtesh Kumar, Co-founder & CTO
tusharjadhav1738@gmail.com



www.mmrfic.com



MMRFIC Technology

Pvt Ltd

Acing the Antenna

Complete end-to-end Antenna solutions

Company Brief

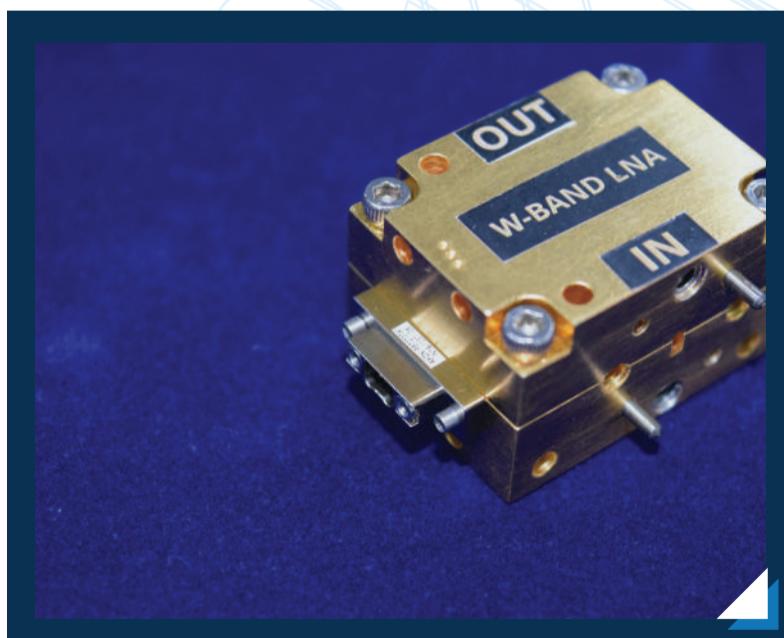
- MMRFIC Technology Pvt Ltd is a Fabless Semiconductor Startup, a company founded by former employees of Texas Instruments with a combined Experience of 70+ years in the field of mmWave, RF & Radar and Communication Signal Processing. The company's expertise is unique in its capability to handle "Antenna to Bits" for a complete system solution to end user.
- The company is focused primarily on indigenisation of hitherto import focused technology with in-house R&D and showcasing the technology for proven manufacturing under Make in India of complex RF mmWave Components and Modules.

Achievements

- Technology Startup of the Year 2019
- 2 patents granted & 5 in pipe-line

Technology/ Product Brief

- mmWave Radar Components
- Power Management
- Transceiver
- Communication Backhaul



Management/ Contact

Saravana Kumar, Director & Founder
saravana@mmrfic.com

www.nanospan.com



Nanospan India

Pvt Ltd

Pioneering Smart Fabrics & Protection

Lighter, Stronger, Better solutions for the field

Company Brief

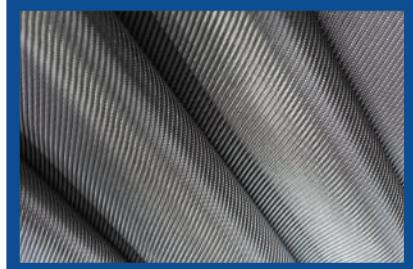
- Nanospan's core expertise is to infuse graphene and other nano-additives into standard base-materials to form composites that offer several orders of magnitude in performance, properties, and strength improvements compared to reference materials.
- Nanospan ballistic solutions are non-metal & conductive which can be used in extreme sub-zero temperatures and their graphene technology makes them lightweight reducing the carrying load for the armed forces

Achievements

- Selected in Silicon India 10 most Promising Energy Solution Providers 2019

Technology/ Product Brief

- Bio-Compatible & Washable Smart (Conductive) Fabrics
- Enhanced Ballistic Protection
- Bulletproof Armours that weigh less than a Pound



Management/ Contact

Ravi Nuguru, CEO &
Founder
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Dr. Venkatramana Gedela, CTO & Co-Founder
vrgedela@nanospan.com
Sampath Kumar Surae,
Director - Customer
Solutions
ssampath@nanospan.com



Navalt Solar and Electric Boats

Sailing towards Success

Eco solutions for the Naval defence sector

Company Brief

- Navalt is looking for ecological and environmental solutions for ship building and naval defence.
- Navalt is proud to have build ADITYA, India's first solar ferry. In 3 years it has clocked 70,000 km ferrying 1 million passengers and managed to save 1 million litres of diesel.

Achievements

- Solar Impulse label for efficient solution that protects the environment in a profitable way
- Social Innovation Award by MEA for being one of the top 20 innovations of the Nation which helps in eradicating the socio-economic problems of India
- GCIP Renewable Energy Prize

Technology/ Product Brief

1. Solar powered boats which run without a drop of fuel ensuring low operating cost and no pollution
2. Electric Propulsion unit train that utilizes electrical power stored in lithium batteries for propulsion offering improved economic and environmental performance
- Hybrid propulsion unit where a direct mechanical drive provides propulsion for high speeds with high efficiency
- Solar-Electric Boats / Electric Propulsion. Save fuel, low noise and vibration without smell of fuel.

Management/ Contact

Sandith Thandasherry,
Founder & CEO



Neocast Alloys

Accelerating ahead with Alloys

Specialised alloy steel casting components for Indian defence

Company Brief

- NeoCast Alloys is a Professional Engineering Technocrat Managed Alloy Steel casting Start-Up steel foundry for manufacturing stainless components specializing primarily in duplex stainless and austenitic stainless steel specialised components and parts in Stainless Steels, Alloy Steels, Duplex steels, Higher alloys, Gun Metals, Manganese bronze castings and other complex metals for demanding applications in engineering used in Marine, Aerospace and Heat resistant higher alloy steel

Achievements

- One of few Alloy steel casting companies to have in house NDT quality inspection department.

Technology/ Product Brief

- Manufacturers of Alloy Steel, Stainless Steel & Super Alloys castings in investment
- Sand & Centrifugal processes for critical applications duly tested at hi-tech inhouse destructive and non-destructive testing facilities





NoPo Nanotechnologies

Winning with Nano Technology

World's best Quality Carbon Nanotubes

Company Brief

- NoPo Nanotechnologies was founded with a vision of making humanity a space faring species. Single Walled Carbon Nanotubes were identified as a material essential to realize the vision due to their high strength, radiation resistance and low weight.
- NoPo manufactures the world's highest quality Single Walled Carbon Nanotubes for applications in Space, Aerospace, Defence and Biotech Applications. The company pioneered the HiPCO® Process of making Carbon Nanotubes with high repeatability.

Achievements

- MOU with Lockheed Martin for HiPCO® Carbon Nanotubes in Aircraft Composites in 2019
- Winner of inaugural iDEX DISC-1 (Indian Navy) grant for HiPCO® Nanotubes in Submarines in 2019
- PwC-FICCI LevelNXT Winner in 2019
- AGNii Selectee

Technology/ Product Brief

- NoPo HiPCO Single Walled Carbon Nanotubes
- Carbon Nanotubes are the strongest material known to mankind. They have been extremely difficult to manufacture as they are 6000x smaller than Carbon Fibers. NoPo is working with iDEX to develop Molecular Membranes for producing Ultra High Purity water in Submarines. Lightning Strike Protection Coatings being developed at NOPO for Lockheed martin could help reduce mass of Composite Fighter Aircraft by up to 500 kgs.

Management/ Contact

Gadhadar Reddy, CEO
Founder
gadhadar@nopo.in





NVM Skytex

Pvt Ltd

UAVs for the Win

Delivering Innovative & Efficient Unmanned Aerial Solutions

Company Brief

- Skytex is engaged in design, development, testing and manufacturing of various types of Unmanned Aerial Solutions, besides offering varied type of applications and services. The strength lies in the in-house design and custom airframe manufacturing capabilities that becomes the greatest differentiator in favor of Skytex. The company specializes in offering end to end solution to its customers. The products and services are customized to meet specific requirements of customer, thereby ensuring customer satisfaction of highest order.

Achievements

- Startup Excellence Award at 21st INDIA INTERNATIONAL SECURITY EXPO
- Development of in-house design, fabrication technique using certified materials

Technology/ Product Brief

- SKYSTAT
- Light aerial vehicle capable to support payload of around 50 kg to an altitude of 5000 feet to 6000 feet while having ability to power the payload continuously and communicating with Remote Terminal by encrypted means.
- Powered by helium/hydrogen to stay in air for more than 5-6 days on a single fill and even more.
- It can support variety of advanced products ranging from EO/IR cameras to ECM/ IMSI/RWR payloads.
- SKYPIGEON
- A VTOL configuration UAV capable to support payload of 5-25 kg and beyond.
-



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Management/ Contact

Manoj Pandey, CEO
info@theskytex.com

Pacify Medical Technologies

Pvt Ltd

Faster Recovery Faster Victory

On field medical innovations for the soldier

Company Brief

- Pacify Medical is a startup based out of SINE, IIT Bombay and a spin-off from BETiC. Pacify Medical has a patent protected technology which can spray skin tissues on the wound for faster recovery of the wound, especially burn wounds. They have an interdisciplinary team of stellar scientist, engineers, clinicians and regulatory specialists.

Achievements

- Pacify Medical is the recipient of prestigious BIRAC grants such as BIG and Startup Innovation awards
- Young innovator award

Technology/ Product Brief

- Skin spray gun
- Higher expansion ratio up to 1:30
- Faster healing rate
- Procedure time is less

Management/ Contact

Saiprasad Poyarekar
saiprasad.poyarekar@gmail.com



Sagar Defence Engineering

Private Limited

Soaring to new heights

Cutting edge technology for UAVs



Company Brief

- Sagar Defence Engineering is based out of Mumbai. SDE is the first ever company in the country to indigenously develop high speed long range unmanned marine surface vehicle for the Indian Armed Forces.
- Achievements
- Winner of the Next Big Idea contest under the Bilateral initiative of Government of India and Government of Canada to provide market access to North American Market in Oct 2019
- Winner of the Get in the Ring 2019 in SDT-CII Technology summit and will represent India in Global Finals in Canada in 2020
- Selected is one of the top Startups under WWF- India Initiative with DLabs at Indian School of Business in 2019
- Winner of Innovative Startup Award by NASSCOM in 2019
- Technology/ Product Brief
- 1. Unmanned Marine Surface Vehicle with sizes up to 16 meters, High Speed up to 42 Knots, Remote control range 25 Kilometers and above as well as Satellite operation capability
- 2. Autopilot Technology- Genesys "Boat in a Box" which is capable of being retrofitted on various vessels sizing from 1.5 meters to 30 meters
- 3. Unmanned Aerial Vehicles- Spectre 2M (60 minutes of endurance with Detection, classification and tracking for actionable insights), Spectre 2T (Tethered UAV up to 80 kgs for persistence surveillance) Spectre 2F (Swarming capabilities with fixed wing up to 50 kms)



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Management/ Contact

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Terero Mobility

Logistics Solutions for the Forces
Catering to austere and remote locations

Company Brief

- Terero Mobility aims at developing mobility and logistics solutions tailor-made for operations in austere environment to reduce manpower requirements and exposure.

Achievements

- Winners of IIGP 2.0 - 2020
- Signed MoU with US based defence company Lockheed Martin for exploring contract for commercial development of Cargo Ground Build-up System

Technology/ Product Brief

- Cargo Ground Buildup System (CGBS) is a unique air-transportable compact unmanned pallet loader for cargo handling operations with tactical transport aircraft operating at austere locations such as in HADR* missions, etc. and is being developed in association with Lockheed Martin for their Hercules C-130 aircraft which is being operated by over 70 countries worldwide.

Management/ Contact

Anupam Chandra, Chief Executive Officer
Vishwajeet Sikchi, Chief Operating Officer
info@tereromobility.com

CARGO GROUND BUILDUP SYSTEM





Torus Robotics

Private Limited

Indigenous technologies for Indian Defence

Innovative and Powerful Defence Automotive solutions

Company Brief

- Torus Robotics is one of India's youngest startups working on Modular Unmanned Ground Vehicles for the Indian Defence. They are also working on world's most effective Power-train technology to serve India's long term demand for an Indigenous powertrain technology.

Achievements

- Torus Robotics is India's youngest startup to Design, Develop & Deliver India's Largest Unmanned Robotic System (MARS V2) to the Indian Army to protect Indian Soldiers during disposal of IEDs and Unidentified objects causing potential threat to the lives of the soldiers.

Technology/ Product Brief

- The modular multipurpose UGV is a completely agile platform, intended to provide support for the troops by serving as a transport platform, remote weapon station, surveillance, reconnaissance and a disposal unit. The vehicle is designed on an open architecture that gives it the multi mission and amphibious capabilities much needed for the modern warfare. Our Innovative PowerTrain Technology offers 30% higher power and is 60% lightweight compared to any other motor technology in the world, which makes it a highly suitable solution for Indian Defence & Aerospace applications.



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Management/ Contact

Mr.Raghunandan Jagdish, CEO,MD
Mr.M.Vignesh, Director
vigneshm.chennai@gmail.com

Ubifly Technologies

Pvt Ltd

Revolutionising Autonomous Aerial Mobility

Most efficient UAV for Delivery applications



Company Brief

- Ubifly is a team of passionate engineers working on transforming the current mobility scenario in the world. They have built Autonomous Hybrid electric Aerial Vehicles which can take off and land anywhere, have a long-range(~2kg) and high endurance(~2hrs).
- The startup is ideated out of the National Centre for Combustion Research & Development Lab (NCCRD), and incubated at IITM Incubation Cell at IIT Madras. The startup is legally incorporated as "Ubifly Technologies Private Limited" and branded as "The ePlane Company".

Achievements

- Recognized as Deep Tech Pioneers by Hello Tomorrow 2020
- Co-founder (Pranjal) recognised as Best Student Entrepreneur 2019 by IIT Madras
- Invited to Dubai (RTA) and London (Move 2020) to demonstrate product and share vision
- Electric fixed wing aerial vehicles for payload delivery with vertical takeoff ability for launch and landing anywhere. Range of 80+ km with a payload of 2 kg with a wing size of 1.4 meter (best in the world).
- Complete autonomy for pilot-less operations. Easy battery swapping design. Carbon fiber build for maximum strength. Indigenous components.

Management/ Contact

Prof. Satyanarayanan
Chakravarthy - CTO &
Founder
Pranjal Mehta
pranjal@eplane.ai



Vartronics Techlabs

LLP

Exploring Extended Reality

Bridging the gap between the real and the virtual



Company Brief

- Established in 2017 and headquartered in Ahmedabad, Vartronics primarily focuses on Extended Reality (XR) and Cognitive Computing and help industries adopt to strategy and technology to rethink their products and services and redefine their relationships with customers, employees and partners.
- By connecting sensors, devices and machines in the physical world to the Immersive world they create multiple new digital opportunities across different verticals.

Achievements

- Winners of Ideathon under the Defence/Homeland Security sector during Vibrant Startup & Technology Summit 2019
- DIPP certified Startup and approved vendor and supplier for Defence PSU
- Received Grant from Industries Commissionerate (Govt. of Gujarat)

Technology/ Product Brief

- Extended Reality (XR) platform TRONIC-ENGINE bridges the gaps in Training/ Simulation & Real-Time application by creating realistic and collaborative content which could be accessed, monitored and applied in real time improving the efficiency of skills transfer, increase knowledge retention, and capture enterprise knowledge within an organization (Specially High-Risk Industries).
- The platform combined with custom Hardware (Head Mounted Displays - RAPTOR AR) will be instrumental in L&D, Training & Simulations, Over The shoulder Assist, Preventive Maintenance, Real Time Field Operations and Disaster Management.
- TRONIC-COMMAND is an Interactive and Collaborative Immersive (XR) 3D visualization layer to be incorporated over Computational layers of applications designed for Aerospace, Defence, Homeland Security, Disaster Management and UAV Platforms.



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Management/ Contact

Stephen Serrao,
Founder
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com](mailto:stephen@vartronics.com)
Ketan Kothari, Co-
Founder



Xovian Aerospace

Pvt. Ltd.

Cutting edge Sustainable Solutions

Critical data gathering through satellite technologies

Company Brief

- Xovian aims at providing sustainable solutions through Satellite Technologies across various industries

Achievements

- Awarded by Dept. of Science and Technology, GOI
- Awarded by Govt. of Karnataka

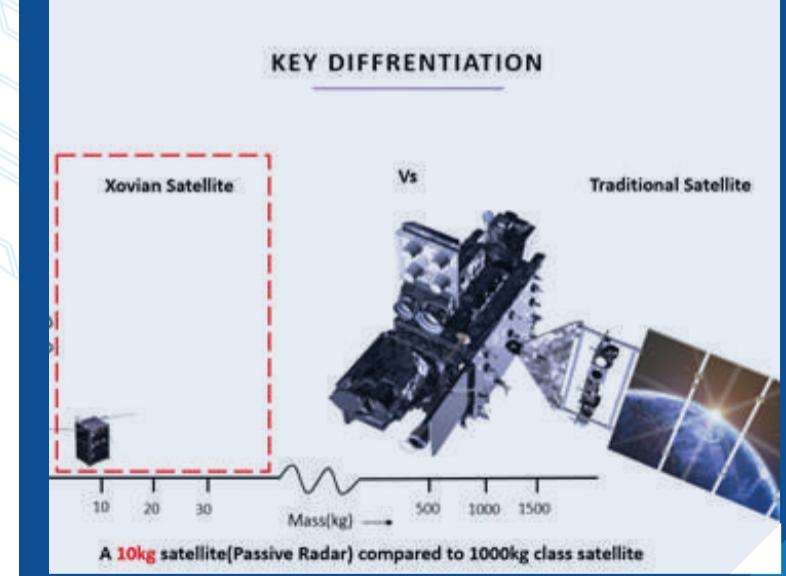
Technology/ Product Brief

- Xovian is Deploying a Real-Time Earth Observation Nano Satellite constellation based on its Passive Radar Technology. Which can provide:
 - Real Time ocean data for Naval fleets and Maritime Industry for safer navigation
 - Fleet Monitoring
 - Glacier shifts and Ice cap melting predictions for the enhanced safety of the armed forces in the mountain regions

Management/ Contact

Ankit Bhateja, Founder
ankitbhateja89@gmail.com

Raghav Sharma,
Founders



ZMotion Autonomous Systems



CONTRIBUTING TOWARDS PROVIDING EDGE TO INDIAN ARMED FORCES

Specializing in Unmanned Aerial, Systems developed indigenously

Company Brief

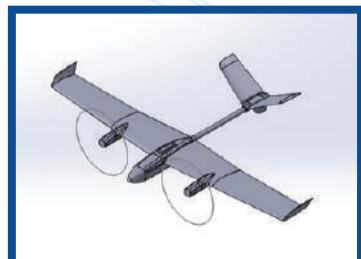
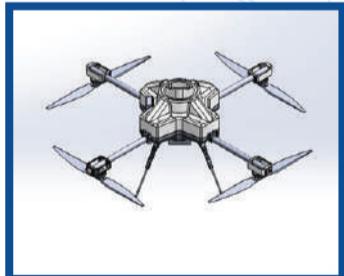
Indigenous manufacturing of Unmanned Aerial Systems and its sub systems with primary focus on defence application and indigenous development of technology. This start up is currently Designing, developing and manufacturing of worlds leading surveillance UAVs in India with application capabilities from medical emergency response to tactical ammunition category and also providing armed forces capability of customization to meet their exact requirement at a marginal cost of import.

Achievements

Winner of defence India start-up challenge

Technology and Product Brief

- Quadcopter Systems
- VTOL Systems
- Gimbals
- Ground Control Station
- Communication
- NPNT
- Mapping Payloads



Management/ Contact

Mrutyunjay Hegde
9590041613
mh@zmotion.in

Synergy



Innovations for Defence Excellence (iDEX)

Launched by the Government of India in 2018, it is primarily aimed at the creation of an ecosystem to foster innovation and technology development in defence and aerospace by engaging industries including MSMEs, start-ups, individual innovators, R&D institutes & academia, and provide them grants/funding and other support to carry out R&D which has good potential for future adoption for Indian defence and aerospace needs.

Objectives

- Facilitate rapid development of new and innovative technologies for indigenous defence production in shorter timelines
- Create a culture of engagement with startups, to encourage innovation for the Defence and aerospace.
- Empower the idea of technology co-creation and co-innovation within defence and aerospace sectors

DIO (Defence Innovation Organisation)

Defence Innovation Organisation is a 'not for profit' company under section 8 of the Companies Act by the two founder members i.e., Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL).

iDEX functions as the executive arm of DIO, carrying out all the required activities while DIO provides high-level policy guidance to iDEX.

Defence India Startup Challenge (DISC)

DISC was launched by Defence Innovation Organisation (DIO) to boost innovations under the iDEX scheme.

DISC 1 and 2 had an **overwhelming response with more than 600 applications** for the three challenges posed by Army, Navy and Air force.

DISC 3 challenges have been launched with three challenges from armed forces.



INVESTMENTS

SPARK grant up to INR 1.5 Crores

This support lead to the formulation of SPARK II which classifies the investment in three levels



Guidelines

- Applicants submit their proposals solving challenges from armed forces. Those showing capability, intent, and promise to be able to solve the challenge and produce functional prototypes are awarded **SPARK (Support for Prototype and Research Kickstart) grant of up to INR 1.5 Crores**, on a milestone basis along with incubation and mentoring support.

SEED STAGE SUPPORT PRE SERIES A/SERIES A FOLLOW ON INVESTMENT

- Applications from individual innovators, students and researchers are also encouraged. The EiR (**Entrepreneur-In-Residence**) program aims to nurture the development of these chosen SPARK Grantees into capable entrepreneurs by providing them necessary financial, technical and management support.

Winners of DISC I and II

44 startups were selected out of which **26 contracts have been signed**.

DISC

DISC 1



Individual Protection System with built-in sensors



See through Armour



Carbon Fibre Winding (CFW)



Active Protection System (APS)



Secure hardware based offline Encryptor Device for Graded Security



Development of 4G/LTE based Tactical Local Area Network



Development of Advanced Technology Based Desalination System (Water Purification) and Bilge Oily Water Separation System



Artificial Intelligence in Logistics & SCM



Unmanned Surface and Underwater Vehicles



Remotely Piloted Airborne Vehicles



Laser Weaponry

DISC 2



GPS Anti Jam Device



Data Analytics for Air Trajectory



Illegal usage of Drones



RADAR IQ

DISC 3



Friend or Foe Identification System



Four Axis stabilized antennae for C and Ku band operation



Portable Spoof Emitter for Surveillance and ground based air-defence weapons

Partner Incubators

iDEX realised the importance of partnering with India's existing incubators to track upcoming Startups/MSMEs and Innovators and investing in them opportunistically, from the Defence Innovation Fund.

DIO has signed MoUs with nine such incubators nominated as iDEX Partner Incubators.



Indian Institute
of Technology,
Hyderabad



SINE, IIT
Mumbai



CIIE, IIM
Ahmedabad



IITM Incubation
Cell, IIT
Madras



Forge,
Coimbatore



T-Hub
Hyderabad



FITT, IIT
Delhi



Maker Village,
Kochi



Indian Institute of
Science, Bengaluru



Atal Innovation Mission (AIM)

Set up in 2016, it is Government of India's flagship initiative to promote a culture of innovation and entrepreneurship in universities, research institutions, private and MSME sector.

AIM also works with various ministries in developing innovation programmes relevant to the associated sectors with socio-economic impacts. All the initiatives of AIM are currently monitored and managed systematically using real-time MIS systems and dynamic dashboards.

1. **Atal Tinkering Labs - at school level:-** Established thousands of Atal Tinkering Labs over the last 2 years enabling students from grade 6 to 12 to have access to and tinker with innovative tools and technologies like 3D printers, robotics, miniaturised electronics and do it yourself kits

Established in schools nationwide with 4880+ operational in 650+ districts and over 2 million students having access to ATLs.

2. **Atal Incubators – at Universities, Institutions and industry level:-** AIM has been establishing world class incubators called Atal Incubation Centres (AICs) in Universities, Institutions and Corporates that would foster world class innovative start-ups and become scalable and sustainable enterprises.

Till date, 102 Universities, institutions and private players selected to foster creation and nurturing of 40-50 world class Startups every 4 years.

47+ AICs with 900+ Startups are already operational and the remaining will be operationalized during this year.

3. **Atal Community Innovation Centres - serving Unserved and Under-Served regions of India:-** To benefit the unserved/underserved regions of India including Tier 2, Tier 3 cities, aspirational districts, tribal, hilly and coastal areas; AIM is setting up Atal Community Innovation Centres with a unique partnership driven model.

AIM to grant up to Rs 2.5 crores to an ACIC subject to a partner providing equal or greater than matching funding.

4. **Atal New India Challenges - Product and Service Innovations with National Impact:-** AIM has launched over 24 Atal New India Challenges in partnership with five different ministries and departments of Central Government.

52 winners have been selected for grant aid and hand holding by Incubators/mentors of AIM

5. **Applied Research and Innovation for Small Enterprises (ARISE) - to stimulate MSME industry innovation:-** AIM to launch ARISE (Applied Research and Innovation for Small Enterprises) along with partner Ministries so that great research ideas are converted to viable innovative prototypes followed by product development and commercial deployment.

6. **Mentorship and Partnerships - with Public, Private sector, NGOs, Academia, Institutions:-** AIM has launched one of the largest mentor engagement and management program "Mentor India – The mentors of Change".

To date AIM has over 10000+ registrations nationwide on the AIM iNNONET portal with 4000+ of them allocated to ATLs and AICs



Technology Development Fund (TDF) Scheme

It is a programme of the Ministry of Defence executed by Defence Research & Development Organisation (DRDO) for meeting the requirements of the Tri-Services, Defence Production and DRDO. The Scheme encourages participation of public/private industries especially MSMEs and Startups to create an ecosystem for enhancing cutting edge technology capability in the defence sector.

- Significant up-gradation/improvements/ further developments in existing products/processes/applications
- Technology readiness level upgradation from TRL 3 onwards to realization of products
- Development of futuristic technologies/innovative products
- Import substitution of components whose technologies do not exist with the Indian Industry
- The scheme to be limited to development of technologies or prototype of product having potential use for the Defence Services.

Eligibility

- Public limited company, private limited company, partnership firms, limited liability partnership, one-person company, sole proprietorship registered as per applicable Indian laws
- The industry has to be owned and controlled by an Indian Citizen
- Industry with excess of 49% foreign investment will not be eligible

Project Duration

Maximum development period will be 2 years

Accelerating Growth of New India's innovations (AGNII)



National initiative under the guidance and support of the Office of the Principal Scientific Adviser to the Government of India. It aims to boost the innovation ecosystem in the country by connecting innovators across industry to the market and helping them to commercialize their innovative solutions. AGNII is also one of the 9 missions under Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC).

The initiative is being implemented by a dedicated team at Invest India. The journey to commercialization involves bringing together solution providers such as research labs, academia, grassroots innovators and solution seekers such as governments, development agencies, companies and aspiring entrepreneurs.

www.drdo.res.in/kalamdb/portal/kalam.com

Dare to Dream Innovation Contest

Dare to Dream Innovation Contest, a partnership between AGNII and DRDO, aims to unearth innovative technologies to enhance the nation's aerospace and defence capabilities. There were 12 science and technology challenge areas for the contest namely multi-legged mobility, plan execution and coordination in multi agent system, deep learning methods for cyber security, swarm of micro-UAVs, joints in composites structures, miniaturization of unfolding mechanisms for rocket lifting surfaces, wearable communication technologies for special operations soldiers, hemostatic agents, artificial oxygen carriers, swarm robot for surveillance and operations in hostile environment, cognitive sensors and technologies for border/perimeter surveillance and an open category: exploring the unthinkable and unimaginable. The contest is offering up to **72 awards worth INR 4.32 crores**.

2 categories in each Challenge Area

INDIVIDUAL

3 Awards/Challenge Area

Up to INR 5 lakhs

START UP

3 Awards/Challenge Area

Up to INR 10 lakhs

- Citizens of India over the age of 18
- All start-ups certified by DPIIT and controlled by Indian nationals

Invest India

It is the national investment promotion and facilitation agency for India, set up as a non-profit, dedicated agency for FDI under the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India.

Its core mandate includes handholding all investors through their India investment journey, including establishing, operating and expanding their businesses in India. They provide comprehensive facilitation including strategic business advisory, policy guidance, location assessment, issue redressal and expansion support.

Invest India is also the execution agency for Government of India's Make in India and Startup India initiatives. It actively works with several Indian states to build capacity as well as bring in global best practices in investment targeting, promotion and facilitation areas.

The Startup India initiative was launched on 16th January 2016 and since then it has provided a major boost to the ecosystem, leading to over 27,000 Startups from 28 States and 9 union territories covering 538 districts today.

In 2019, Invest India helped bring in more than \$22 billion worth of investments into India. These investments mushroomed into more than 135,000 new jobs in the Indian economy and helped incorporate nearly 500 companies in the country.

World's most awarded IPA

- UNCTAD Award for Promoting Investment in Sustainable Development in 2018
- Best Investment Project Award by the Ministry of Economy, UAE for three years in a row
- Elected as the Vice President of the World Association of Investment Promotion Agencies (WAIPA) in 2018

Ease of Doing Business

Department of Defence Production (DDP) has taken various reforms and policy initiatives to enhance ease-of-doing business in defence and aerospace to help MSMEs.

1. Defence Investor Cell (www.defenceinvestorcell.gov.in)

A Defence Investor Cell (DIC) was set up by the Department of Defence Production in January 2018 to provide help, support and guidance to defence industry, particularly MSMEs.

During 2018-19, the DIC received 704 requests (as on 01.01.20) for help and out of these 690 were addressed/ closed. The average time taken for response was less than 2 days while average time for closure was less than 07 days.

2 Testing facilities

Test facilities available with various Government agencies (OFG, DPSUs, DRDO, DGQA, DGAQ& SHQs) have been made available to private sector. The details of test facilities, procedure and other Terms & conditions are available on websites of respective Government Agencies.

3 Trade Receivables electronic Discounting System (TReDS)

To ensure that MSMEs supplying material to Defence PSUs get timely payment, all nine Defence PSUs have implemented TReDS during 2018-2019.

4. Opening Access to Defence Market

During 2017-2018, DDP had notified 275 items which were previously exclusively sourced from OFB, for sourcing from open industry. As a further ease of doing business, 141 items have been placed on Government e-Marketplace during the year.



5. Public Procurement Order

DDP has notified 112 items under Public Procurement Order 2017 by Department for Promotion of Industry and Internal Trade (DPIIT). The Defence PSUs and OFB are thereby required to give preference to domestic manufacturers while procuring these items.



6. Enabling MSMEs through DPP

The 'Make' Procedure has been simplified with provisions for funding of 90% of development cost by the Government to Indian industry and reserving Government funded Make-I projects not exceeding development cost of Rs. 10 Crore and procurement cost Rs. 50 Crore per year for MSMEs. The industry funded Make-II Projects not exceeding development cost of Rs. 3 Crore and procurement cost Rs. 50 Crore per year have also been reserved for MSMEs.

Revised Make-II procedure has several industry friendly provisions including:

- No limit on vendors who could participate in prototype development
- No retraction of RFP once issued
- Reduced time line for contract finalization
- Hand-holding support from Project Management Team etc.

44 projects given approval-in-principle under Make-II

Ministry of Defence has approved, in February 2019, a 'Make-II' for OFB



7. Indigenisation policy

Government has notified a Policy for indigenisation of components and spares used in Defence Platforms in March 2019



8. Suo-moto scheme

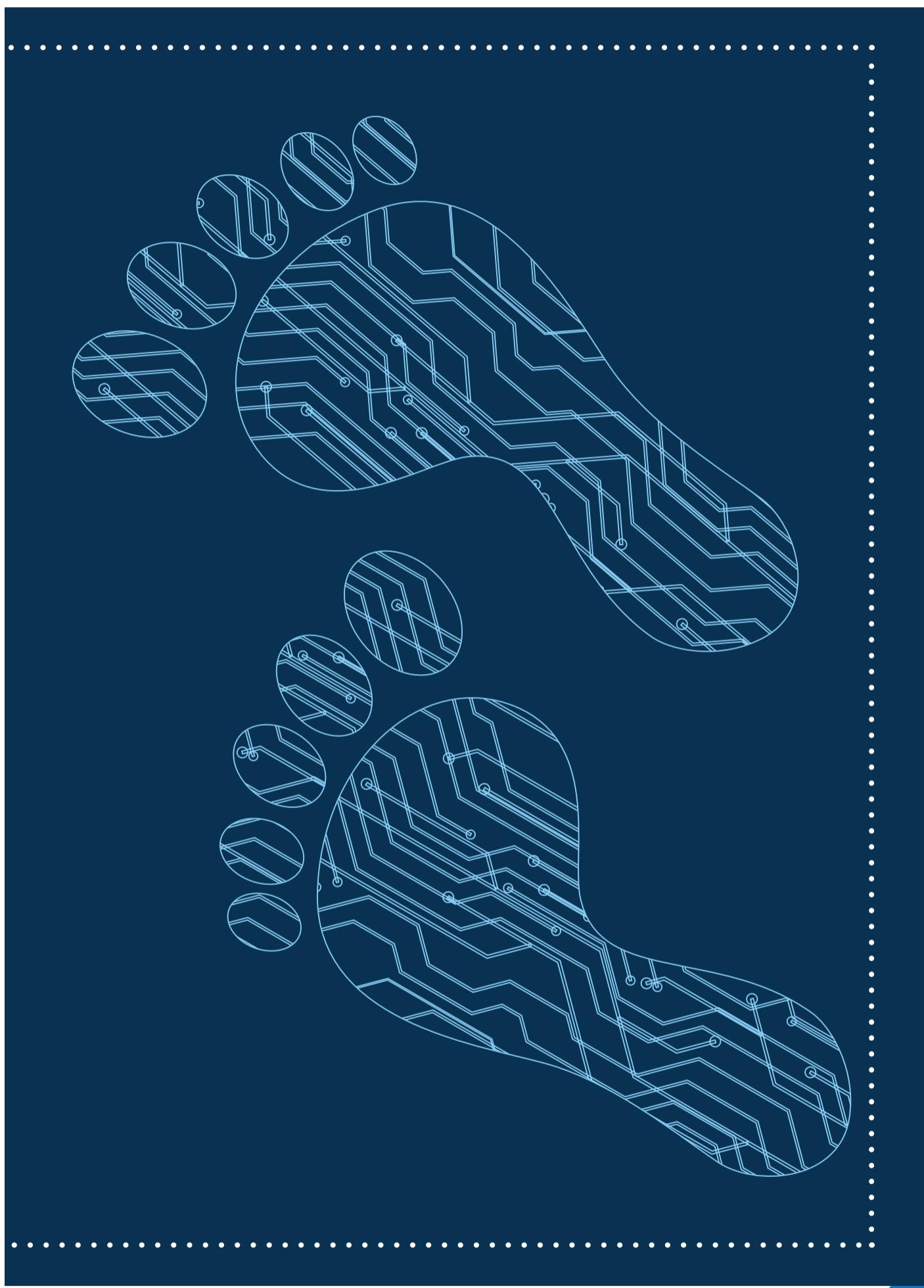
Enabling industry to suo moto propose products/equipment that they think can be used by any of the three Services, Army, Navy, Air Force by submitting online proposals.

13 suo-moto proposals have been granted approval-in-principle in 2018-19.



Directory





Aerospace UAV

Company Name	Company Website
Max AeroSpace & Aviation Pvt.Ltd.	www.maxaerospace.com
ComAvia Systems Technologies Pvt. Ltd.	www.comavia.com
Mechano Engineering Company	www.mecblr.com
Aeronav Industrial Safety Appliances	www.aeronv.org
ideaForge Technology Pvt. Ltd.	www.ideaforge.co.in
Asteria Aerospace Pvt Ltd.	www.asteria.co.in
OM UAV Systems	www.omuavsystems.com
Alpha Design Technologies Pvt.Ltd.	www.adtl.co.in

Aerospace AEROSPACE COMPONENTS

Company Name	Company Website
B.P. Engineers Pvt. Ltd.	www.bp-engineers.com
Electrolinks Technologies Pvt.Ltd.	www.electrolinkstech.com
Shanmukha Industries	www.shanmukha.in
River Engineering Pvt.Ltd.	www.riverengg.com
M/s. Microtech Precision Engineering	www.microtechprecisionengineering.com
British Engineers	www.britishengineers.co.in

Chanakya Wire Technics Pvt Ltd	
B.P. Engineers Pvt. Ltd.	www.bp-engineers.com
Shanmukha Industries	www.shanmukha.in
Aero Fasteners Pvt. Ltd.	www.aerofpl.com
Precision Transmission Chain	www.ptchain.net
B P Engineers Pvt Ltd	www.bp-engineers.com
Aero Fasteners Pvt Ltd	www.aerofpl.com
Aerospace Engineers Pvt Ltd	www.thesalemaeropark.com
Vignesh Machine Tools	www.vigneshmachinetools.com
Macro Precision Components Pvt Ltd	www.macroprecision.com
Gopalan Aerospace India Pvt.Ltd	www.gopalanaerospace.com
Shanthi Gears Ltd	www.shanthigears.com
Tec Aero Devices	www.tecaero.in

Aerospace AVEONICS

Company Name	Company Website
SASMOS HET Technologies LTD	www.sasmos.com
Alpha Tocol Engineering	www.alphatocol.in
Avantel Limited	www.avantel.in
AutoTEC Systems Pvt Ltd	www.autotecsystems.com
Radiall India Pvt. Ltd.	www.radiall.com
Mak Controls & Systems	www.makcontrols.com
Macro Precision Components Pvt Ltd	www.macroprecision.com
Andhra Pradesh Aerospace & Defence Electronics Pvt. Ltd.	www.apadepark.com
Southern Electronics Pvt Ltd	www.seonics.co.in

Fabrication and Machining

Company Name	Company Website
Bharij Fabricators	www.armtech.in
Bluemount Castings Private Limited	www.bluemountindia.com
Smiths and Founders (India) Limited	www.smithsandfoundersindia.com
Precitech Forgings & Engineering Pvt Ltd	www.precitechforgings.com
Balambikai Industries	www.balambikaiindustries.com
Arm & Hammer Forgings Private Limited	www.ahfpl.com
Vinir Engineering Pvt Ltd	www.vinirforge.com
Gee Pee Electrospark Pvt Ltd	www.geepeelectrospark.in
Budhan Engineerings Pvt Ltd	www.budhan.com
Gowra Aerospace Technologies Pvt Ltd	www.gowra.com
Anand Engineering Corporation	www.anandengineering.com
Manideep Techno Coats	www.manideeptechnocoats.com
Micron Engineers	www.micron-engineers.in
Miracle Electronics Devices Pvt Ltd	www.miracle.net.in
Nike Energy Manufacturing Pvt Ltd	www.nikeenergy.in
Nucon Aerospace Pvt Ltd	www.nuconaerospace.com
PMT Engineers	www.pmtengineers.in
Premier Auto Cables	www.premieraucables.com
Reinforced Plastic Industries	www.reinplast.in
Rotomac Industries (P) Ltd	www.rotomac.org
Sika Interplant Systems Ltd	www.sikaglobal.com
Vishwakarma Machine Tools	www.vmtgroup.in

Wintegral Engineering Pvt Ltd	www.wintegral.co.in
B.P. Engineers Pvt. Ltd.	www.bp-engineers.com
Abab Industries	www.ababindustries.com
Mody Pumps (India) Pvt Ltd	www.modypump.com
Sree CNC Technics	www.sreecnctechnics.com
Universal Gaskets	www.universalgaskets.in www.parikhgaskets.com
Precision Transmission Chain	www.ptchain.net
Chadha Industries Private Limited	www.arkefilters.com
Caliper Engineering & Lab Pvt Ltd	www.caliperlab.in
Cybele Industries Limited	www.qflexcable.com
S L Precision Tools Pvt Ltd	www.slptindia.com
Suhaas Engineering	www.Suhaasengineering.com
Adroit Industries (India) Ltd.	www.adroitindustries.com www.groupsignet.com "
Universal Gaskets	www.universalgaskets.in www.parikhgaskets.com
Raghu Vamsi Machine Tools Pvt Ltd	www.raghuvamsi.com
Comprotect Engineering Pvt Ltd.	www.raghuvamsi.com
Bharij Fabricators	www.armtech.in
Magod Laser Machining Pvt Ltd	www.magodlaser.in
Vinir Engineering Pvt Ltd	www.vinirforge.com
Sandeep Metalcraft Pvt Ltd	www.sandeepmetalcraft.com
Shri Navkar Metals Limited	www.shrinavkar.com
Acoustics India Private Limited	www.acousticsind.com
Mechano Engineering Company	www.mecblr.com
M/s Sehbey allied Industries, Mohali'	www.sehbeyindustries.in
SKM Technologies Pvt Ltd	www.skmtechnologies.com
Smith & Founders (India) Ltd	www.smithsandfoundersindia.com

Electronics & Communication AI & ROBOTICS

Company Name	Company Website
SenseGiz Technologies Pvt Ltd.	www.sensegiz.com

Electronics & Communication COMMUNICATION

Company Name	Company Website
Process Care Systems India Pvt Ltd	www.datacareindia.com
Elektronik Lab India Pvt Ltd	www.elektroniklab.com
Kotkar Energy Dynamics Pvt Ltd	www.kotkar.com
Astra Rafael Comsys Pvt Ltd	www.astraelcomsys.com
Digital Agents Interactive Pvt. Ltd.	www.digitalagents.in
Zen Technologies Ltd	www.zentechologies.com

Electronics & Communication SIMULATORS

Company Name	Company Website
E.I.S. Electronics (India) Pvt Ltd	www.eis-india.com
Crown Solar Powering Fencing Systems	www.crownsolar.com
Dvizira Private Limited	www.dvizira.com
PHI Audiocom Systems Pvt Ltd	www.phiaudiocom.in
ADH Labs Pvt Ltd	adhlabs.com
Sandeep Metalcraft Pvt Ltd	www.sandeepmetalcraft.com
Jupiter Integrated Sensor Systems Pvt Ltd	www.jupiterelectronics.com
Processware Systems Pvt Ltd	www.ptpl.com
SMEC Automation Pvt Ltd	www.smec.in
SBEM Pvt Ltd	www.sbem-india.com

Engineering & Design TESTING AND EQUIPMENTS

Company Name	Company Website
AKG India Private Limited	www.akg.india-in
Oscar Equipments Pvt. Ltd.	www.oscarequipments.com
Sri Koteswara Cam Systems Pvt. Ltd.	www.sreekoteeshwar.com
Omega Filters India	www.omega-filters.com
Vaiseshika Electron Devices	www.vaiseshika.com
GEM Pressure Systems Pvt Ltd	www.gemengg.com
Zauri Engineering Services	www.zuarengineeringservice
Dynafluid Valves & Flow Controls Pvt Ltd	www.dyna-fluid.com
Shanthi Gears Limited	www.shanthigears.com
Avery India Limited	www.averyweigh-tronix.com
Khushboo Scientific Private Limited	www.khushbooscientific.com
Pan india group	www.panindiagroup.com
LPS Bossard Pvt Ltd	www.bossard.com
Kalyani Rafael Advanced Systems Pvt Ltd	www.krasindia.com
Captronic Systems Pvt Ltd	www.captronicsystems.com

Engineering & Design HYDRAULICS AND PNEUMATICS

Company Name	Company Website
Dantal Hydraulics Private Limited	www.dantal.in
Omshakthi Hydraulic Pvt Ltd	www.oshpl.int
ANANT Industries	www.anantgroup.com
Sepson India Private Limited	www.sepson.se

Engineering & Design

ELECTICALS DESIGNS

Company Name	Company Website
Waves Electronics Private Limited	www.waveselectronics.com
River Engineering Pvt Ltd	www.riverengg.com
INDUSREE	www.indusree.com

Engineering & Design

ENGINEERING SOLUTIONS

Company Name	Company Website
Research DEV. & MFG. Corporation	www.rdmcisindia.in
SAP Parts Pvt Ltd	WWW.SAPPARTS.COM
River Engineering Pvt Ltd	www.riverengg.com
Alfa Laval India Private Limited	www.alfalaval.in
Yeomen Marine Services Pvt Ltd	www.yeomanmarine.com
CORE Energy Systems Pvt. Ltd.	www.core.co.in
Geo Marine Dynamics India Pvt Ltd	www.geomardy.com
Precision Electronics Ltd	www.pel-india.com
Lucid Software Ltd.	www.kovidndt.com/CMS/
Vaidheswaran Industries	www.vindindia.com
Geo Informatics Consultant Pvt Ltd	www.gicpl.com
Esri India Technologies Ltd.	www.esri.in
Zebec Marine Consultants & Services Pvt Ltd	www.zebecmarine.com
AKG India Private Limited	www.akg.india-in
AvioHeliTronics Infosystem Pvt Ltd	www.aviohelitronics.com/

Med solutions

Company Name	Company Website
Miraqules MedSolutions Pvt Ltd	www.miraqules.com
APRUS Biomedical Innovations, Pvt. Ltd.	www.aprus.eco
Innpharx Research Private Limited	www.innpharx.com

Metal and Alloys

Company Name	Company Website
Mahalakshmi Alloys & Metals Pvt Ltd	www.MAMPL.IN
Habor Paul International Pvt Ltd	www.haborpaul.com
Fine Forge Ltd	www.fineforge.co.in
Mahibhadra Industries	www.manibhadraind.com
Shera Metal Pvt Ltd	www.sheraenergy.com
ECKHARDT STEEL & ALLOYS	www.eckhardtsteel.com
Steel Samrat (India)	www.steelsamrat.in
Metalix Incorporate	www.metalexin.com
M/s Indian Solder and Braze Alloys,	www.indiansolder.com www.indiansilveralloys.com

Automation and Componants

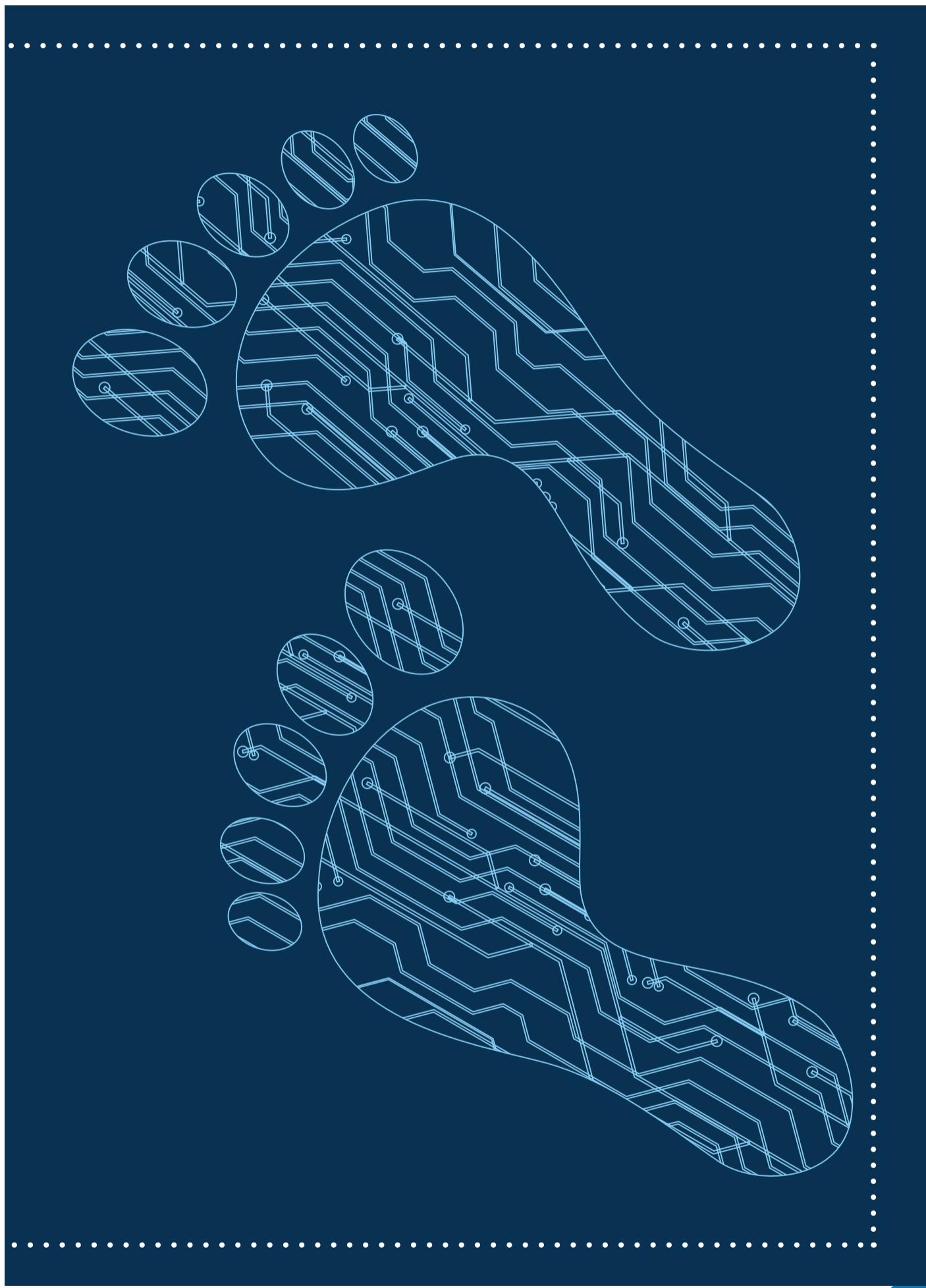
Company Name	Company Website
Deutz Engines (India) Pvt Ltd	www.deutz.com
Alpha Drives	www.alphadrives.co.in
British Engineers	www.britishengineers.co.in
AB Engineering and systems private limited	www.abengg-systems.com
Yeoman Marine Pvt Ltd	www.ympl.in
Nandan GSE Pvt Ltd	www.nandan.co.in
Rane Holdings Limited	www.ranegroup.com
Reliable Autotech Pvt Ltd	reliableautotech.com
RUNFLAT Tire Systems	www.runflat.in

Chemicals and Rubber

Company Name	Company Website
Millenium Aero Dynamics Pvt Ltd	www.millennium.in
Southfield Paints Limited	www.southfieldpaints.com
Manideep Techno Coats	www.manideeptechnocoats.com
Ailga Rubber Works	www.ailga.com
Statfield Equipments Pvt Ltd	www.statfieldequipments.com www.yashprabha.com
Mysore Polymers & Rubber Products Ltd	www.mypol.in
M/s Indian Solder and Braze Alloys	www.indiansolder.com www.indiansilveralloys.com
Microsign Products	www.microsignproducts.com
Neocast Alloys	www.neocastalloys.com
Alfa Rubber and Springs Pvt Ltd	www.alfarubber.com
Reinforced Plastic Industries	www.reinplast.in



Success Stories





Saif Automations Services LLP.

Story of indigenization, innovation or induction

Need to have a first responder for rescuing the person in water has been predominant in India who has a coast line of more than 7500 Kms, since casualty recorded due to delay in first response is high. Also during natural calamities "remote first responder" is need of the hour to reduce the risk to rescue team. Alternative products in International Market are available but they are costly and not affordable for a developing country like India, and further it also deepens our dependence on foreign OEM for Spares and Maintenance.

So was born our endeavour to have a state of the art product (*Saif Seas*) Indigenously Developed and Manufactured (IDMM) for the general masses. *Saif Seas* is a multidisciplinary product involving the concepts of Mechanical Engineering, Embedded Electronics, Composites Engineering, Naval Architecture and IoT Engineering Ideas.

Achievement

The Largest feather to the Cap of Team *Saif Seas*, was being Declared as winner to iDex Start Up Challenge – 1 under Unmanned Surface Vehicle with stringent requirement of Indian Navy. Further National Research Development Corporation (NRDC) under Department of Science and Technology has sponsored the complete Intellectual property rights and has held us during various arbitration arises due to Intellectual Property.

Saif Seas has been incubated by the Andhra Pradesh Innovation Society (APIS) at Vishakhapatnam, and are one of the top 5 participants in the XLR8 AP program for Technology Business Accelerator program of APIS, FICCI and The IC2 Institute of University of Texas at Austin. Apart from these, the product and the team have got wide acclamation from online and print media. Saif Seas was also showcased in a one to one interview by the ET Now leaders of Tomorrow series 2019.

Key feature of the product

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Weight	12-15 Kgs.	Light weight for easy deployment by any person
Speed	6-8 Knots (3-4 m/sec, ie.11-14Km/hr)	To reach the victim in distress faster
Floatation	Up to 200 kgs.	Serves as a floatation device for 3 adults
Radio controlled device		Less risk to the life guard trying to save the person in distress
Possible Customization		Can be customized for varied requirements of customers
Hydro-dynamically designed hull		Better speed and stability performance in waters.

Application

- Life Saving at Sea
- Disaster relief
- Recovery of personnel from inaccessible locations in water

How it will provide edge to Indian Armed Forces?

Saif Seas is to complement the existing infrastructure of the Indian Armed forces for providing faster response for the first responders, and also reducing the risk of life to them. Indigenously designed, developed, and manufactured produced is in line with the vision of reducing dependencies to the foreign OEMs for spares and service, creates local jobs in high tech field, and also opens door for India as an exporter for defence products.



"The Co-founders of Saif Seas are highly indebted to iDex Team who has catalysed in faster development of the products and sling shot it to next level of Orbital Recognition. They have guided and hand hold to complete the development of the product to meet the stringent requirement of Defence Forces and has created the pathway for fast indictment in Indian Defence forces."

- AliAsgar Calcuttawala
Co-Founder



Big Bang Boom Solutions

Private Limited

Story of indigenization, innovation or induction

Big Bang Boom Solutions (BBBS) is a deep tech defense solutions integrator, with a core focus on developing indigenous intellectual property. They are currently working on a number of indigenous technologies such as Hybrid Personal Armor, Spray Based Wound Dressing with coagulant and disinfectant, 360 Advanced Battle Interface for Tanks, Anti Drone Defense System and Artificial Intelligence as the underlying base for all.

Achievement

BBBS has recently won the prestigious SKOCH award for their Hybrid Personal Armor.

Key feature of the product

Currently the best available, international standard military specification armor plates are made of Boron Carbide. But these ceramic body armors are manufactured using high temperature and high-pressure equipment that requires specific gas ambience which make the manufacturing process extremely cumbersome and expensive.

BBBS' Boron Nitride based Hybrid Personal Combat Armor involves a low temperature and low-pressure technique which not only helps in cutting down the manufacturing time but also reduces the manufacturing costs drastically.

Application

All this while increasing the durability compared to existing armors. The proposed armor can provide maximum protection from high velocity threats such as the M193 and M855.

The BBBS Ceramic Composites were put to real world tests as shown below.



"As a new entrant in the defence space, it's extremely refreshing to see the way the iDEX program has been designed to support startups like us. Due to such programs, we are able to concentrate on what we do best, create indigenous IP for Indian defence."

- Praveen Dwarakanath
CEO, Big Bang Boom Solutions

TONBO IMAGING



Story of indigenization, innovation or induction TONBO IMAGING: BOLSTERING INDIA'S DEFENCE

From struggling to get an audience in the defense corridors, Tonbo Imaging's cutting-edge technology has trailblazed its way into the hands of most frontline soldiers, state troops, police forces.

The company has single-handedly democratized Night Vision Technology by making it size, weight, power and cost-efficient. It has aggressively chased the vision to equip the armed forces with Artificial intelligence technologies that will put native forces at a substantial advantage against its adversaries.

This year, Tonbo Imaging has supplied ~10,000 thermal imaging systems to Indian army and Central Armed Police Forces (CAPF) under the Ministry of Home Affairs, India (MHA). Furthering our vision for integrated battlefield solutions the company has focused efforts on developing counter-UAV solutions to thwart cross-border UAS and RPA threats and protect vehicles and convoys against hostile drones.

Awards

See Through Armor solution (STAR): "The SPARK grant for DISC 1 Challenge launched under DIO's IDEX initiative".

India Today's "Emerging Entrepreneurs Award" for Defence Innovation- 2018.

CNBC 12th Indian Business Leader Award (IBLA): Young Turks Startup of the year- 2017.



Product Description

STAR, SeeThroughArmoR, is a surround crew vision system that leverages augmented reality (AR) along with advanced imaging and sensor systems. It stitches day and night image from 18 cameras on an innovative heads-up display that simultaneously provides real-time panoramic feed to all the crew members.

Application

STAR gives an increased situational awareness to Commander and he can engage multiple targets, Gunner gets the capability to seamlessly slew the gunner's main sight with a target prioritized by the commander, hence enhances the target search and track capability for multi-threat analysis in real time. Driver gets a panoramic view of his surroundings in the most natural form despite the space constraints inside the AFV

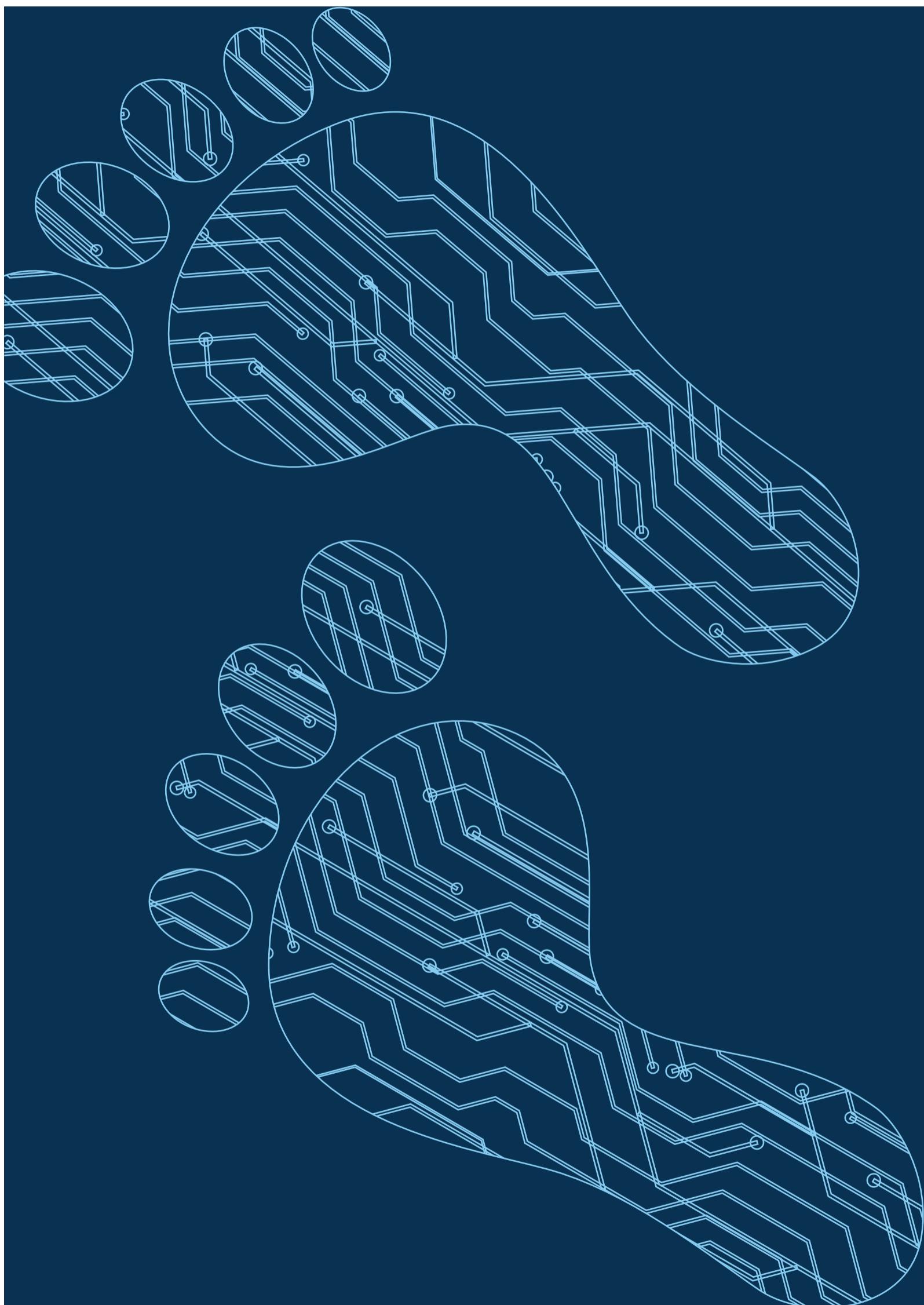


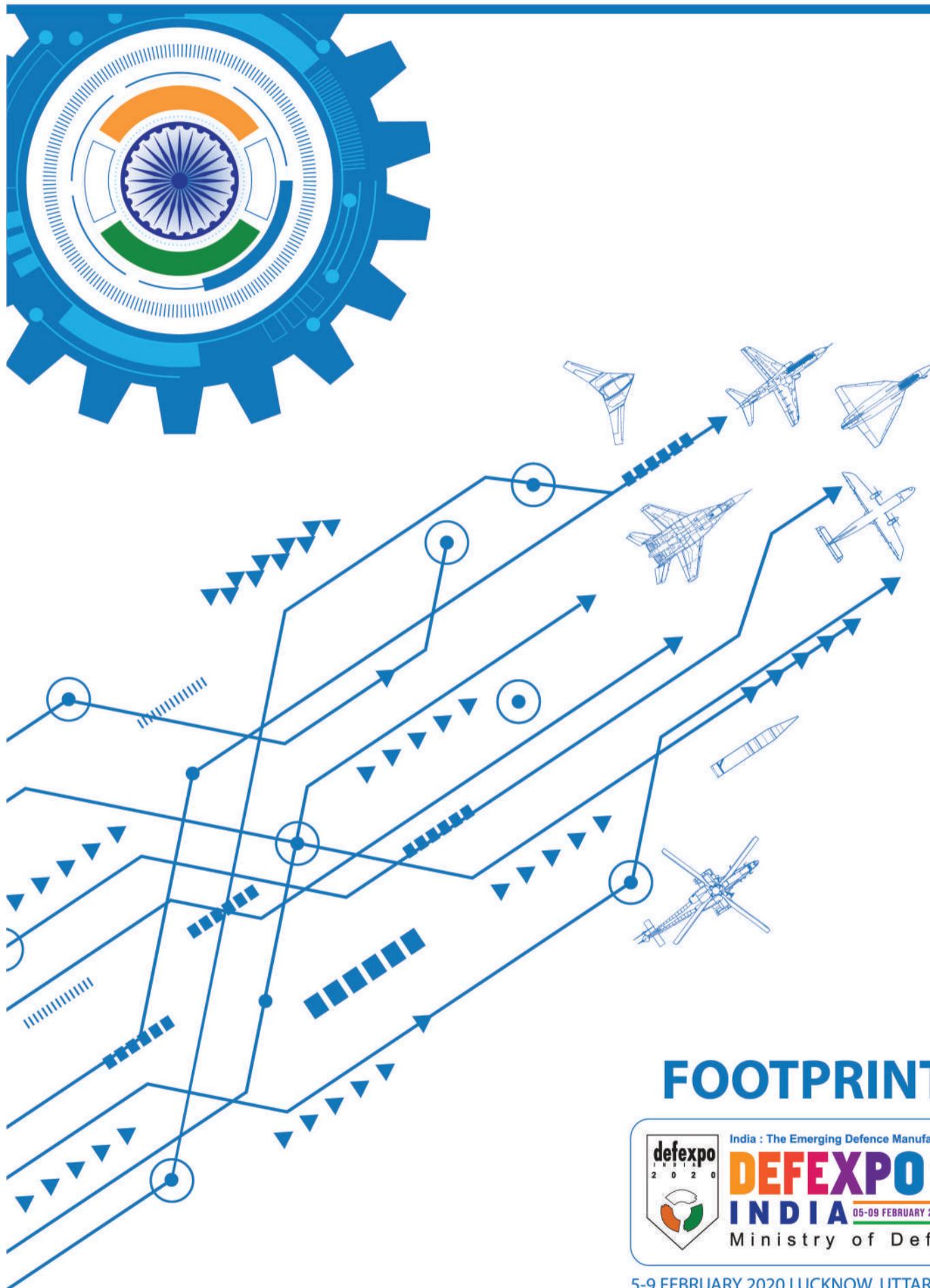
How will it provide edge to Armed forces?

See Through Armor solution (STAR) solves one of the most restrictive issues of armored warfare, maintaining 360 -degree situational awareness from the cramped and noisy confines of a mobile steel fortress. The panoramic see through armor system significantly improves the vehicle's all-round survivability and enhances the vehicle's capability to respond first and rapidly inflict damage.

"From struggling to get an audience to winning the India iDEX SPARK grant to build See Through Armor system for the armed forces, we've made a noticeable journey. Thank you for recognizing our work @DefenceMinIndia @DefProdInIndia @drajaykumar_ias #makeinindia4defence"

- Ankit Kumar
CTO





5-9 FEBRUARY 2020 LUCKNOW, UTTAR PRADESH