





We are moving fast from the biggest defence importer to a major exporter. Defence manufacturing is becoming more and more vibrant in India. We believe in - Make in India, For India and For the World! Today we are developing a new defence ecosystem with the efforts of all. We have strengthened our public sector defence companies and defence R&D has been opened to the private sector, academia, MSMEs and start-ups. 5 5





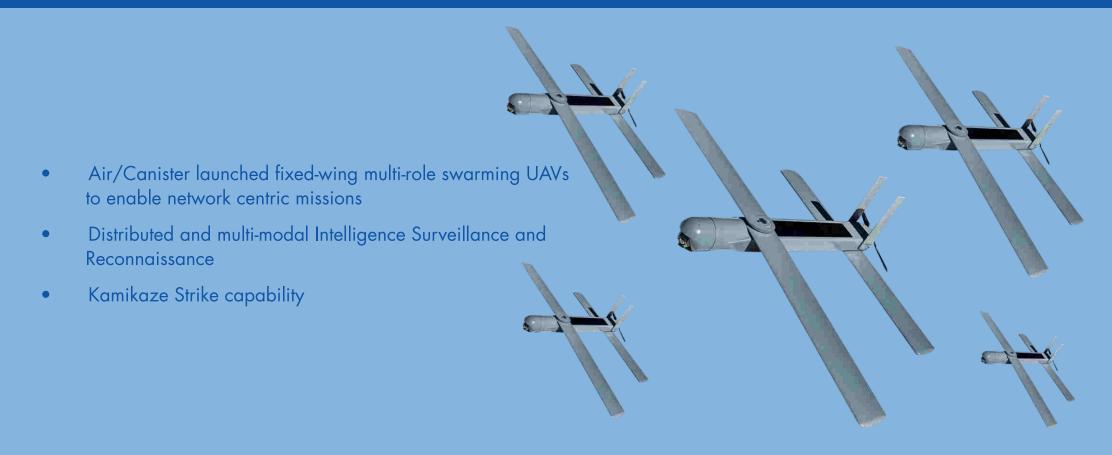
Timely infusion of technologies like
Al & Big Data in the defence sector is of
utmost importance. Our country is full of
scientific & technologically trained youth
who have innovative minds and the desire
to contribute to Nation Building.



DRONE AND ANTI DRONE SYSTEMS

ALFA-S

Disruptive Technology Solution to Air Launch Swarm UAVs from a Fighter Aircraft



TRINETRA



ELECTRO OPTICAL DRONE PAYLOAD

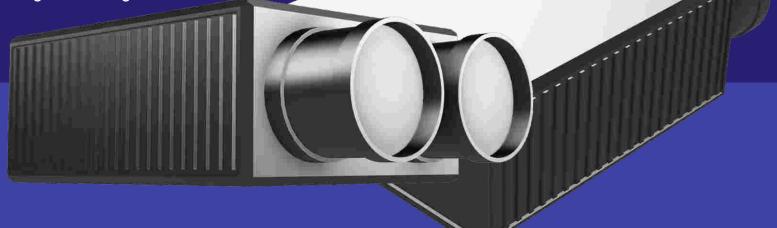
Customized Advanced CMOS Imaging System for High-resolution & High-altitude Imaging

• Format: 95 Megapixel

Detector: CMOS digital monochrome image sensor

 Image Capture: Programmable Image Exposure time and Gain Modes

Total weight: <15 Kg



ANTI-DRONE DEFENCE SYSTEM

Cutting Edge AI & Computer Vision-based Illegal Drone Detection & Disabling System

- Enables advanced precise detection of drones and their payload
- Drone flight pattern recognition
- Drone Detection: Up to 15 drones
- Detection Distance: Up to 20 Kms of semi-spherical radius
- Jammer Technology: RF Barrage, FM Modulated white noise



DRONAAM COUNTER DRONE SERIES

Advanced Rifled, Manpack, and Mounted Jammer Series



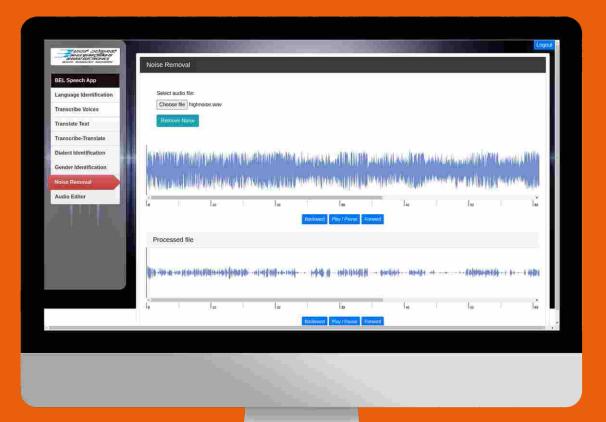
- Protection against hostile UAS
- Portable Jammers with 1,2 & 5 Km ranges
- Directional and Omni Directional coverage
- Fast Interception Time & upgradable with custom frequency options



AI-BASED SYSTEMS

AI ENABLED VOICE ANALYSIS SOFTWARE (AIVAS)

AI/ML enabled proactive maintenance of very critical & hard real time systems



- Detection of anomaly / failures / early warning and asset condition parameters
- Continuous monitoring all critical sensor data for better health condition of assets
- Minimizes down time of complex systems
- Easy deployment & flexible for customization

PROHM + SOFTWARE

Al-based Flight Data Analytics Software for Predictive Maintenance







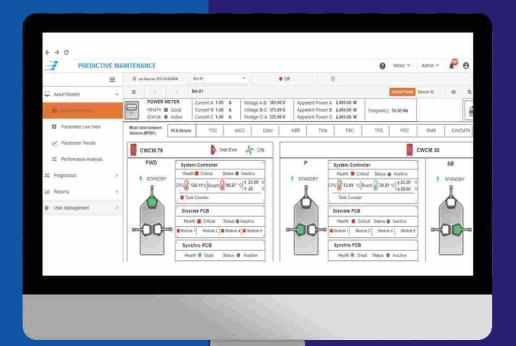


- Machine Learning & Al capability
- Descriptive, Predictive and Prognostic Data Analytics with visualization
- Engine, airframe and electronic equipment health monitoring

AI ENABLED PREDICTIVE MAINTENANCE SYSTEM (PdM)

AI/ML enabled proactive maintenance of very critical & hard real time systems

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AjnaESAS 360° SEE-THROUGH ARMOUR SYSTEM

State-of-the-art See Through Armour System for All Weather Conditions

- 360° camera system mounted on the tank
- Augmented Reality Head Mounted Display (AR-HMD) worn by the crew member
- Robust camera system empowers crew with night vision,
 4X zoom capabilities
- Day & Night vision with 8X zoom capabilities with IFF and BMS

DISTRIBUTED SEE THROUGH ARMOR MODULE

Cutting Edge AI based Distributed "STA" System



- 360° natural, real-time, continuous, and seamless day and night video of surroundings
- Ballistic and Blast protection of STANAG Level -2
- Power back up source of 06 hours

WOLFPACK-STAR

Novel 360° See Through Armor Solution

- Real-time multi-sensor situational awareness and threat detection for armoured platforms
- Integrated holographic heads-up display relays role-based information to each crew member
- Al enabled target detection, recognition and tracking
- Modular, Easy to integrate and low maintenance



INFANTRY WEAPONS TRAINING SIMULATOR (Zen IWTS®)



ZEN TANK DRIVING & CREW GUNNERY SIMULATOR



Commander's Cabin



SIMULATORS

State-of-the-art Simulator Systems Enacts Tactical Scenarios & Make Soldiers Combat Ready

- Live, virtual, constructive and mixed reality combat training systems
- Helps in preserving the life of the real tank, saving on cost and logistical requirements while creating a lethal and efficient tank crew
- 24x7 training, increasing confidence of soldiers in handling various weapons

DRIVER FATIGUE MONITORING SYSTEM

An Innovative Real Time, Non Intrusive, Al Based System Ensures Safe Driving



- Continuous monitoring for accurately identifying situations of drowsiness and fatigue for preventing accidents and fatalities
- Digital output to trigger external safety devices
- Seamless integration with data logger, real time alarm and video uploading for abnormal driving behaviour
- Built in infrared light for detection in all weather conditions and Android compatibility

NAVIGATION AND COMMUNICATION SYSTEMS

Navic- NAVIGATION WITH INDIAN CONSTELLATION

An Indigenous Regional Navigation Satellite System with Improved Visibility & Availability in Indian Subcontinent



- An Indigenous Regional Navigation Satellite System
- Improved visibility and availability in Indian subcontinent
- Better than 5 m position accuracy in dual frequency
 NavIC mode
- Grid based model for lonosphere delay corrections
- Broadcast of disaster alert warnings

GEOSPATIAL SITUATIONAL AWARENESS TOOL

Edge Al Solution for Advanced Processing of Geospatial Data



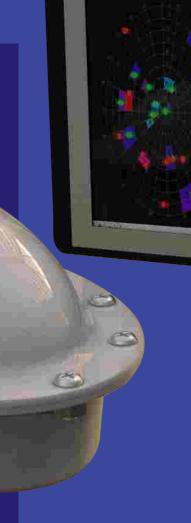
- Indigenized solution that provides comprehensive real-time geospatial situational awareness
- Secure-edge field trainable AI
- Real-time & Hardware accelerated
- Automated zero-code data processing

LOW SWaP GPS ANTI-JAM DEVICE

Multi-constellation (NavIC) Supported GPS Anti-Jam Device

- Multi-stage Jamming & Interference mitigation
- Uses Hybrid Signal Processing

Supports GPS and NavIC standards



ARMOS (QKD) - ALICE & BOB

Revolutionary Variant of QKD Encryption Technology



- Quantum encryption over 150 km
- QKD technology using DPS protocol with Decoy State Method
- QKD pair of devices for Quantum Key Generation & Distribution
- Trusted Relay Node

ABHED1

Comprehensive Hardware-based Secure-encryption-system without any Operating System

- Secure cryptography solution
- Fully hardware-based encryption and decryption device
- Purely hardware based without any processor or firmware-code
- Eliminates any hardware Backdoors/Trojans/Debugpaths



VYAPI

India's first home grown 4G LTE eNodeb - base station



- Lekha's Software stack includes L1, L2 & L3 layers and hardware includes Digital base band, Radio module and High-Power front end
- Extremely flexible for private Networks and Defence Tactical Network
- Deployable as 'Network in a box' by integrating the Core Network



GIGAMESH

Advanced Multi-beam E-band with Gigabit-speed Backhaul Radio & Secure Communication System LAN based Tactical Communication Point-to-MultiPoint E-band Radio Deployment of 5G and Rural Broadband networks Multiple Non-shared Links in a Single Device (Multiple- Point-to-Point Links) ASTROME TECHNOLOGIES PVT. LTD.



AUTONOMOUS SWARM

sty 6

Pioneering Cutting-edge Autonomous and Intelligent Underwater Swarm Drone Technology

- Autonomous Swarm of underwater vehicles for Mine Counter Measure
- Works with pre-feed data on detected and classified mines in the area
- Fully operational with available data catering for position accuracies in open and shallow waters





15.5m Infused Sandwich FRP Boat powered by twin engine with superior ability, Conceptualized for Maritime Intelligence Gathering, Surveillance & Reconnaissance (ISR) Missions

- Suitable for AI based threat identification & countermeasures
- Al enabled decision making, reverse communication & navigation
- Failsafe remote operation from any location
- Capable to navigate in dense marine traffic with upto 50 NM range

SAIF SEAS - LIFE

World Class Remotely Operated
Rescue Watercraft

- Battery-Operated Self-Propelled Lifebuoy
- Floatation 200 kgs (3 Adults)
- Carrying capacity 150 Kgs streamlined objects
- Maximum Speed 8 to 10 knots
- Remote Control Range 1 Km LOS

MIDGET SUBMARINE (MS-X02A)

Fully Equipped Stealth Based
Platform with Minimal Acoustic
& EM Signatures for Final Leg
Operations

- Integrated state-of-the-art SONAR, GPS, Inertial Navigation System & Communication systems
- Dry swimmer delivery vehicle for covert military operations
- Independent as well as ship launched operation in shallow and deep waters

AIR SYSTEMS

LCA TEJAS

Pilot Friendly, Multirole, Supersonic, 4+ Gen Fighter with a Lethal Punch

 India's flagship Fighter aircraft integrated with modern Avionics suite

Available variants - Fighter, Lead-in Fighter Trainer

 Quadruplex digital fly-by-wire Flight Control System (FCS) with associated advanced flight control laws

 High strength to weight ratio, composite structure, long fatigue life and low radar signatures





- Significant Stealth features due to sleek and composite structure
- Armour protection,
 Night attack
 capability and crash
 worthy landing
 gear for better
 survivability
- EO pod, Helmet Mounted Display System & EW suite

MISSILE SYSTEMS

AKASH

Multi-Target, Multi-Directional capabilities with built-in ECCM, Super Sonic Short-Range SAM



- State-of-the-art real time
 OS and open system
 architecture for fully
 automatic and network
 centric operation
- All weather, air defence weapon system with engagement range upto 25km
- 60 kg high-explosive, pre-fragmented warhead with a proximity fuse
- Fully powered till intercept using advanced solid integral ramjet technology
- High immunity against active and passive jamming





State-of-the-art, All Weather Long Range Artillery System with High Cross Country Mobility & Superior Combat Performance

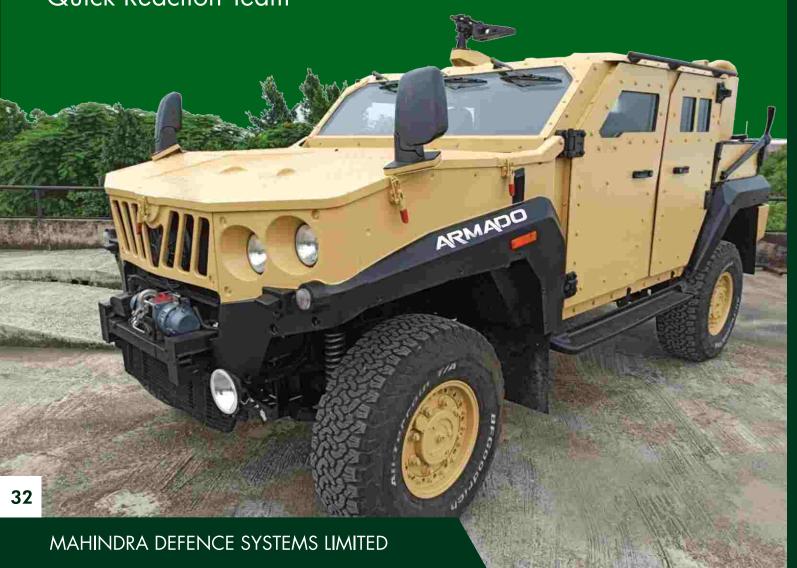
- A battery of six launchers can fire a salvo of 72 free flight rockets in 44 seconds
- Over 7.2 tons of payload in the form of lethal warheads
- Capable of effectively neutralizing a target area of 1000m x 800m
- Total operational time optimised for shoot & scoot capability
- Onboard INS for more accuracy
- Built on an 8x8 chassis with high cross country mobility

LARSEN & TOUBRO LTD. (L&T) • TATA ADVANCED SYSTEMS LTD. (TASL)
MUNITIONS INDIA LTD. (MIL) • ECONOMIC EXPLOSIVES LTD. (EEL, SOLAR GROUP)



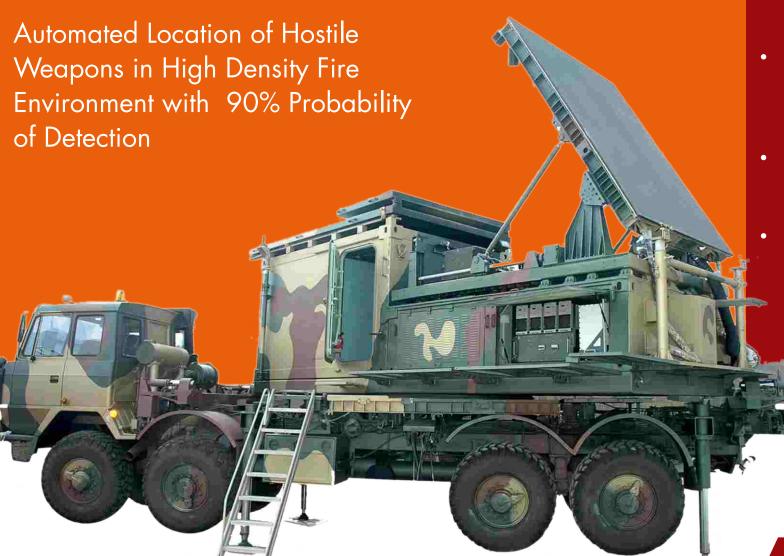
ARMADO

Light Specialist Vehicle for Recce and Quick Reaction Team



- 4 Seater Capacity having Ballistic protection for STANAG I/II and Underbelly protection for Hand Grenade
- Powerful 215 HP Diesel Engine with 4 / 6 Speed Automatic Transmission.
- All-wheel Independent Suspension with Central Type Inflation System.
- 360° Rotatable turret for 7.62 MMG, ATGM and AGL
- Stowage space for arms & ammunitions inside crew compartment and additional 400 Kgs cargo load carrying capacity.

WEAPON LOCATING RADAR



- Advanced algorithms and state-of-the-art hardware for detection, location and tracking of the requisite targets
- Highly effective counter RAM
 Radar with both hostile and
 Registration of Fire mode
 of operation
- Designed to survive physical rigours of battlefield and soft hostile electronic warfare
 - Designed for high mobility, quick deployment and decamp

ADVANCED TOWED ARTILLERY GUN SYSTEM (ATAGS)

State-of-the-art 155mm X 52 Calibre All Electric Drive Howitzer with 48Km Range, High Mobility, Quick Deployability & Night Firing Capability



Can Fire all types of 155mm JBMoU/NATO standard shells with BMCS and smart ammunitions like VLAP, Excalibur, etc

- Futuristic and technically superior breech, can withstand pressure up to 560Mpa
- Zero backlash All Electrical Drives: Hydro electric gun system
- Automated ammunition handling system
- Self-propelled capability with a speed of 20kmph

MEDIUM BULLET PROOF VEHICLE (MBPV) - MK-II

All Weather Versatile Off-road Vehicle with Easy Maneuverability, Operability & Survivability



- Ballistic & Blast Protection to meet NATO STANAG LEVEL I
- High power to weight ratio (16.5 kW/T) with Automatic transmission
- 360° rotatable collapsible turret and roof hatches, auto close gun ports

TATA WHEELED ARMOURED

PLATFORM 8X8

Unmatched Optimum Combination of Tactical Mobility & Survivability



- Fully amphibious, independent suspension with hydro-pneumatic strut
- Powerful 600+ HP engine coupled with automatic transmission
- **Ballistic** protection configurable upto STANAG IV
- Compatible with 30mm/ 40mm, 105mm/120mm gun or any other weapon station
- Variants: Armoured Fighting Vehicle, CBRN, Recce & Support, Medical Evacuation, Mortar Carrier and Anti-Tank Guided Missile Vehicle

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TATA ADVANCED SYSTEMS LIMITED (TASL)

01 02 03 04 ALFA-S **TRINETRA ELECTRO OPTICAL DRONE PAYLOAD ANTI-DRONE DEFENCE SYSTEM NEWSPACE RESEARCH & TECHNOLOGIES PVT. LTD.** ZMOTION AUTONOMOUS SYSTEMS PVT. LTD. 3rdiTech (DV2JS Innovation) **BIG BANG BOOM SOLUTIONS PVT. LTD.** : Vrinda Kapoor **Contact Details** Contact Details : Sameer Joshi Contact Details : Mrutyunjay Hegde Contact Details : Dr. Shivaraman Ramaswamy : +91 98710 16388 : +91 94355 35508 : +91 95900 41613 +91 98193 67939 : vrindhakapoor33@gmail.com, : sameer.joshi@newspace.co.in : biz@zmotion.in : shivi.masti@gmail.com vrindha@3rditech.in 05 06 08 **DRONAAM COUNTER DRONE SERIES DRISHTI 10** PROHM + SOFTWARE AI ENABLED VOICE ANALYSIS SOFTWARE (AIVAS) **GURUTVAA SYSTEMS PVT. LTD.** Adani Defence & Aerospace **BHARAT ELECTRONICS LIMITED** RADOME TECHNOLOGIES AND SERVICES PVT. LTD. Contact Details : Harshad Dave Swapnil Jalundhwala : International Marketing Head Contact Details Contact Details Contact Details : Sumukh Kumble : +91 98184 25566 +91 99099 45581 : +91 11613 26014 : +91 87626 40093 : harshad@gurutvaa.com : swapnil.Jalundhwala@adani.com : imd@bel.co.in sales@radometech.com 10 12 AI ENABLED PREDICTIVE MAINTENANCE SYSTEM (PdM) 09 **WOLFPACK-STAR** AjnaESAS 360° SEE-THROUGH ARMOUR SYSTEM **DISTRIBUTED SEE THROUGH ARMOR MODULE BHARAT ELECTRONICS LIMITED** DIMENSION NXG PVT, LTD. **BIG BANG BOOM SOLUTIONS PVT, LTD,** TONBO IMAGING INDIA PVT. LTD. Contact Details : International Marketing Head Contact Details : Pankaj Raut Contact Details Contact Details : Cdr Rajendrakumar : Shivaraman Ramaswamy : +91 11613 26014 : +91 98193 67939 : +91 98452 77639 : +91 98848 09660 : imd@bel.co.in : pankaj@dimensionnxg.com : shivi.masti@gmail.com : rajendrakumar.d@tonboimaging.com 13 Navic-Navigation with Indian Constellation (15) GEOSPATIAL SITUATIONAL AWARENESS TOOL 16 **SIMULATORS** DRIVER FATIGUE MONITORING SYSTEM ZEN TECHNOLOGIES LTD. BEML LTD. **INDIAN SPACE RESEARCH ORGANISATON (ISRO)** CYRAN AI SOLUTION PVT. LTD. Contact Details : Ms. Apoorva Contact Details : Mr. Satish Kulkarni : Director SatNavPO, ISRO HQ Contact Details : Dr. Manan Suri Contact Details : +91-40-23813281 : +91 99000 76482 : +91 080- 2217 2313 : +91 8860054190 : isales@zentechnologies.com : dir-satnavpo@isro.gov.in : manansuri2002@gmail.com : mpa@beml.co.in **617** 18 19 20 LOW SWaP GPS ANTI-JAM DEVICE ARMOS (QKD) - ALICE & BOB **ABHED1** VYAPI HW DESIGN LABS PVT. LTD. ONU LABS PVT. LTD. CHIPSPIRIT TECHNOLOGIES PVT. LTD. LEKHA WIRELESS SOLUTIONS PVT. LTD. Contact Details : Javakrishnan A L Contact Details : Sunil Gupta Contact Details : Mohan Jindal Contact Details Ramu T Srinivasaiah : +91 98453 55599 : +91 91830 17168 : +91 95000 93999 : +91 97313 95260 : jkrish@hwdesignlabs.com : sunil@gnulabs.com : mohan.jindal@chipspirit.com : ramu@lekhawireless.com

24 SAIF SEAS - LIFE 21 **AUTONOMOUS SWARM** 22 AUTONOMOUS FAST INTERCEPTOR BOAT (AFIB) 23 Gigamesh SAIF AUTOMATIONS SERVICES LLP SAGAR DEFENCE ENGINEERING PVT. LTD. **GOA SHIPYARD LIMITED (GSL)** ASTROME TECHNOLOGIES PVT. LTD. **Contact Details** : Aliasgar Calcuttawala Contact Details : Neha Satak Contact Details : Mr. Nikunj Parashar Contact Details : Dr. Shivaraman Ramaswamy : +91 93930 75192 +91 99169 12037 : +91 11-41345353 / 41620690 : +91 98192 63177 saif.automations@gmail.com : fpp_office@goashipyard.com : astrome@astrome.co : nikunjp@protonmail.com 25 26 27 28 **MIDGET SUBMARINE (MS-X02A) LCA TEJAS LCH PRACHAND AKASH** MAZAGON DOCK SHIPBUILDERS LIMITED (MDL) HINDUSTAN AERONAUTICS LIMITED HINDUSTAN AERONAUTICS LIMITED **BHARAT DYNAMICS LTD. (BDL)** Contact Details : Marketing Head Contact Details : GM Marketing **Contact Details** GM Marketing Contact Details GP CAPT AK BANSAL +91 22 2376 3005 / 2376 3027 : +91 80-22320197 / 80-22320860 : +91 80-22320197 / 80-22320860 : +91 -11-41345353 / 41620690 mdlmktgmazdock.com marketing@hal-india.co.in marketing@hal-india.co.in : bd-export@bdl-india.in 29 30 PINAKA MULTI BARREL ROCKET LAUNCHER SYSTEM 31 **ASTRA BRAHMOS** PINAKA MULTI BARREL ROCKET LAUNCHER SYSTEM 31 **BHARAT DYNAMICS LTD. (BDL) BRAHMOS AEROSPACE** LARSEN & TOUBRO LTD. (L&T) TATA ADVANCED SYSTEMS LTD. (TASL) Contact Details GP CAPT AK BANSAL Contact Details : Ms. Apoorva Contact Details : Avinash Upadhye **Contact Details** Pranav Kumar Singh : +91 98188 23157 : +91-11-4128 5307 / 98706 44473 : +91 22 6705 2156 : +91 80-9706 6500 bd-export@bdl-india.in : www.brahmos.com : intel.defence@larsentoubro.com pranav.singh@tataadvancedsystems.com 32 33 WEAPON LOCATING RADAR **ARMADO** PINAKA MULTI BARREL ROCKET LAUNCHER SYSTEM 31 PINAKA MULTI BARREL ROCKET LAUNCHER SYSTEM 31 MAHINDRA DEFENCE SYSTEMS LIMITED **BHARAT ELECTRONICS LIMITED MUNITIONS INDIA LTD. (MIL) ECONOMIC EXPLOSIVES LTD. (EEL) (SOLAR GROUP)** : HEAD - SALES & MARKETING : International Marketing Head Contact Details Contact Details Contact Details : Rajat Saxena I.O.F.S. : Marketing Head Contact Details : +91 1275 288280 : +91 11613 26014 : +91 98900 91886 / 20 6708 0414 +91 20-67042868 / 67042851 : defencesystems@mahindra.com : imd@bel.co.in : exports@munitionsindia.in defence@bharatforge.com ADVANCED TOWED ARTILLERY GUN SYSTEM (ATAGS) 34 35 36 ADVANCED TOWED ARTILLERY GUN SYSTEM (ATAGS) 34 TATA WHEELED ARMOURED PLATFORM 8X8 MEDIUM BULLET PROOF VEHICLE (MBPV) - MK-II TATA ADVANCED SYSTEMS LTD. (TASL) BEML LTD. TATA ADVANCED SYSTEMS LTD. (TASL) **BHARAT FORGE LTD. (BFL)** Contact Details Marketing Head Contact Details Pranav Kumar Singh Contact Details : Marketing Head Contact Details Pranav Kumar Singh : +91 20-67042868 / 67042851 +91 80-9706 6500 : +91 80-22963200 / 80-22963141 : +91 80-9706 6500 : defence@bharatforge.com : corpcomm@beml.co.in : pranav.singh@tataadvancedsystems.com pranav.singh@tataadvancedsystems.com





