

INDIA
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सत्यमेव जयते

EPARTMENT OF
DEFENCE PRODUCTION



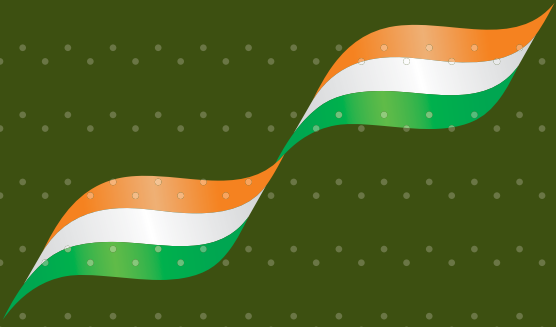
FOREWORD

Over the years, the Indian defence sector has witnessed substantial growth. Since 2002, the defence sector is fully open to the Indian private sector. Today, public and private sector, both with the extensive support given by the Government of India are able to design, develop and deliver state-of-the-art defence systems based on the latest indigenously developed technologies. These systems draw on the strength of proven software and hardware architectures and provide safety, security and threat management capabilities to armed forces.

Today, India's defence sector can deliver a wide variety of world class weapon systems that can play a critical role in a nation's security framework. Indian products aim to deliver defence solutions that are designed to meet the highest standards of quality, durability and affordability. This hand-book compilation aims to showcase the various tried and tested weapon systems that are currently operational. It also provides an insight into capability of Indian defence industries and the wide range of products developed by them for Indian defence forces which are available for exports with Government approval.







LAND SYSTEMS



AKASH AIR DEFENCE WEAPON SYSTEM



Description:

The Akash air defence missile system is a medium range, surface-to-air missile system which provides area air defence against multifarious air threats to mobile, semi mobile and static vulnerable forces and areas. The system has cutting edge features with cross country mobility.

The real time multi sensor data processing and threat evaluation enables simultaneous engagement of multiple targets from any direction. The entire system is flexible, up scalable and can be operated in group and autonomous modes. It employs command guidance and relies on phased array guidance radar to guide the missile till intercept.

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 1420720485432

Specifications:

- » Range of Operation : 4.5 km to 25 km
- » Altitude of Operation : 100 m up to 20 km
- » Length : 5870 mm
- » Diameter : 350 mm
- » Weight : 710 Kg
- » Guidance System : Command Guidance
- » Target types: Helicopters, Fighter Aircraft, UAVs etc.
- » Fully automatic with quick response time from target detection to kill.
- » Open system architecture ensures adaptability to existing and futuristic Air Defence environments.
- » High immunity against active and passive jamming.
- » Secured mode of communication between combat elements.
- » Self-sufficient in electrical power with in-built power sources.
- » Road and rail transportable with quick mobilization and deployment capabilities.
- » In-built safety features with IFF.



Description:

[illegible]

Specifications:

COMPANY : Advanced Weapon Design Equipment India Ltd.
NSN 1025 720 471 000



ADVANCED TOWED ARTILLERY GUN SYSTEM



Description:

The Advanced Towed Artillery Gun System is a 155 mm/52 calibre artillery system jointly designed and developed by ARDE (DRDO). Its futuristic and technically superior breech, with higher service pressure and can withstand pressure up to 560 Mpa. It can fire any type of ammunition.

COMPANY : Bharat Forge Limited
CONTACT : mohit.singh@bharatforge.com
NSN 1025720487409

Specifications:

- » 155 mm 52 Calibre Gun System
- » Firing range of 48.074 km (HE-ERFB BBI) & 38.569 km (HE-ERFB BT)
- » Zero backlash Electrical drives: Hydro-electric gun system
- » System has ability to fire Zone 7 charge
- » Elevation Angle : -3° to $+75^{\circ}$ with the speed of 5°/s
- » Ground clearance: 400 mm
- » Self-propelled capability with a speed of 20 kmph

155MM/ 52 CAL TRACKED SELF PROPELLED GUN K9 VAJRA-T



Description:

The K9 Vajra-T gun system has proven to withstand extreme weather conditions both in severely cold areas as well as in desert terrain. It is equipped with longer firing range with a higher rate of accuracy and effective state-of-the-art firing capabilities.

Specifications:

- » 155 mm/52 calibre tracked self-propelled gun system

COMPANY : Larsen & Toubro Limited
CONTACT : intl.defence@larsentoubro.com
NSN 2350720487383



BHARAT-52



Description:

It is a long-range 155 mm/52 calibre towed gun, providing a highly manoeuvrable field artillery solution. It has been designed for accuracy, stability and reliability during firing manoeuvres. It has a self-suspension arrangement which is achieved by using walking beam system which provides ease of maintenance. It has self-propelled capability with a speed of 21 kmph and is able to ride at Towing vehicle's speed during towed mode. It can fire any type of ammunition.

Specifications:

- » 155 mm 52 Calibre Gun System
- » Gun Dimensions : Length 10258 mm x Width 2880 mm x Height 2656 mm
- » Arc of fire (Traverse angle of fire) : $\pm 35^\circ$ to right and left, with the speed of $5^\circ/\text{s}$
- » Elevation Angle : -3° to $+72^\circ$ with the speed of $5^\circ/\text{s}$
- » Steering : Steer-by-wire method for maneuvering the artillery
- » Deployment time : 1 minute in day, and 1.5 minute in night
- » Weight : 15 ton
- » Equipped with fully automatic Load Assist System (LAS) with manual backup arrangement with rate of fire as follows :
 - Burst rate of fire : 3 rounds in 30 sec
 - Intense rate of fire : 12 rounds in 3 min
 - Sustained rate of fire : 42 rounds in 1 hr

COMPANY : Bharat Forge Limited
CONTACT : mohit.singh@bharatforge.com
NSN 1025720487410

भारत इलेक्ट्रॉनिक्स लिमिटेड
भारत फोर्ज लिमिटेड

COMPANY : Bharat Electronics Limited

COMPANY : Bharat Forge Limited



ZU 23 UPGRADE



Description:

The Zu-23 Upgrade converts the manually-laid gun into an all-electric system with autonomous functionality. It enables effective engagement of aerial and ground targets, Incorporates the automatic target tracker and complies with the operating and storage temperatures, humidity, dust and rain protection requirements for reliable and fault-free operation.

COMPANY : Larsen & Toubro Limited
CONTACT : intl.defence@larsentoubro.com
NSN 1005720487384

Specifications:

- » Modular construction for easy maintenance



Specifications:

- Free Flight Rockets
- 105 mm or Larger Guns : 6 to 307kms•
- Weapon Locating Range
- 81 mm or Larger Mortars : 4 to 207kms•
- Time to bring Radar out of action for move
- »Time to bring Radar into action :
- »Simultaneous targets tracked :
- »

TATA WHEELED ARMoured PLATFORM 8X8 (WHAP)



Description:

Tata Wheeled Armoured Vehicle is India's 1st indigenous 8x8 Wheeled Amphibious ICV jointly developed in collaboration with DRDO. It is a fully loaded vehicle with safety features such as Blast, Ballistic and NBC protection. Its Modularity and Scalability feature helps this vehicle to be easily modified to cater to various terrain condition and missions. A low maintenance vehicle, with a seating capacity of 10+2 people, the WhAP 8x8 comes in various variants such as Armoured Fighting vehicles, CBRN vehicle, Recce & Support vehicle, Medical Evacuation vehicle, Engineer Squad vehicle, Mortar Carrier, Commander's vehicle and Anti-Tank Guided Missile vehicle.

Tata WhAP is in-service with Indian Army.

COMPANY : Tata Advanced Systems Limited

CONTACT : pranav.singh@tataadvancedsystems.com

NSN 2355720487370

Specifications:

- » Mobility
 - Max Engine output : 600 HP @ 2000rpm
 - Max Torque : 2400 Nm @ 1500-1700 rpm
 - GVW : 22.5T (Amphibious) to 26T
- » Protection
 - Ballistic Protection : Modular from STANAG I to V
 - Blast Protection : upto STANAG III

BATTLE FIELD SURVEILLANCE RADAR - EXTENDED RANGE (BFSR-XR)



Description:

Battlefield Surveillance Radar - Extended Range (BFSR-XR) is a man portable, battery powered state-of-the-art Pulse Doppler Surveillance Radar capable of automatically detecting and displaying a diversity of moving targets such as pedestrians, group of men, vehicles, tanks, low flying Helicopters, etc. It is light weight and operates 24 hours a day under all weather conditions. It has a J-band Pulse Doppler Radar with built in test equipment (BITE) and built-in digital magnetic compass for North alignment. It is used for Border surveillance, Battlefield surveillance, Intelligence gathering, Protection of sensitive sites and Prevention of infiltration and illegal immigration.

Specifications:

» Range Accuracy : 20 m rms	» Power consumption : 100 watts
» Range Resolution : 50 m	» Weight of system (excluding accessories) : 30 Kg
» No of tracked targets: upto 99	» Operating temperature : -20°C to +55°C
» Target identification : using Doppler tones	» Relative humidity : upto 95% at 40°C
» Power supply : 24 Volts DC nominal	» Altitude : 4500 mtrs
	» Wind load (operation): 80 kmph

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 5840720487324

3D LOW LEVEL LIGHT WEIGHT RADAR (ASLESHA)



Description:

ASLESHA is a multifaceted ground based S-Band 3D Low Level Light Weight Surveillance Radar for deployment in diverse terrains like plains, deserts, mountain tops and high altitude regions. Aslesha detects and tracks heterogeneous air targets, including helicopters, fighters and UAVs at low and medium altitudes. It can be easily transported by men, light vehicles and under slung by helicopter and is fast and easy to install and decamp. It can track while scanning up to 100 targets and has full 3D capability using multi-beam technology and is enabled for networking with Integrated Asterix protocol.

Specifications:

» Environmental : JSS 55555 compliant	» Power consumption : < 1 kva
» Height coverage : 30 m to 4500 m (AGL)	» Accuracy
» Elevation coverage : 0° to 30°	• Range : < 50 m
» Power source : Generator with UPS and Battery	• Azimuth : < 0.5°
	• Height : ± 500 m
	• Resolution
	Range : < 200m,
	Azimuth : < 7°

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 5840720472437



MILITARY VEHICLES



Description:

Ashok Leyland has vehicles for Defence in Light, Medium & Heavy Duty segments. Ashok Leyland provides different power packs for Armoured fighting vehicles and self-propelled guns, power pack for different uses including Gen sets and 16 to 80 seater buses. These vehicles are used for a variety of applications apart from normal load carrier to Ambulance, Recovery, Fire Fighting, Refrigerated Lorry, Fuel & Water Bowsers, Rocket Launcher, Radars, Missile.

Specifications:

- » Product range: 1T GVW (Gross Vehicle Weight) to 100T GTW (Gross Trailer Weight)
- » Vehicles for Defence in Light, Medium & Heavy Duty segments
- » Configuration of 4 x 4, 6 x 6, 8 x 8, 10 x 10 for high mobility
- » Medium Bullet Proof Vehicles (MBPV 4 x 4)
- » Mine Protected Vehicle (MPV 4 x 4)
- » Personnel Protected Vehicle (PPC 4 x 4)

COMPANY : Ashok Leyland

CONTACT : gayathri.r@ashokleyland.com

NSN 2320720200752

MINE PROTECTED VEHICLE (MPV)



Description:

The MPVs can carry upto a dozen fully armed personnel and have a provision for gun sights in bullet proof glass from where troops can take on targets outside. There is also a provision to install a rotating heavier gun on top of the vehicle. MPVs can move cross-country across most terrain even while taking fire and hitting back at terrorists. The vehicle consists of monocoque hull/body. The cabin assembly is built of high quality steel alloy. Maximum safety of the crew from ballistic and other forms of attack is provided by virtue of its "V" shaped envelope of the body. MPV is in-service since 2008.

COMPANY : Armoured Vehicles Nigam Ltd.

CONTACT : export@avnl.co.in, marketing@avnl.co.in

NSN 2355720487367

Specifications:

- » Dimensions : 6600 x 2800 x 3120 (in mm)
- » Ground Clearance : 305 mm
- » Speed : 100 kmph max
- » Patrol Speed : 50 kmph
- » GVW /Pay Load : 13170 Kg/1500 Kg
- » 750 km (Cruising Range)
- » Protection Level : Mine Blast 14 Kgs TNT under wheels 10 Kgs TNT under Hull & 7.62 SLR Rifle firing from a distance of 10 meters on all sides of vehicle



PINAKA MULTI-BARREL ROCKET LAUNCHER



Description:

The Pinaka Multi-Barrel Rocket Launcher (MBRL) System is a high-tech, all weather, long-range, area fire artillery system built on an 8 x 8 chassis with high cross-country mobility. It is fitted with electro-mechanical outriggers with an auto levelling feature to stabilise the launcher during launch.

Specifications:

» Range	: Over 40 kms
» Ready-to-fire rockets	: 12 (2 pods)
» Control of Firing	: Auto/Manual
» Firing Modes	: Single/Salvo
» Time to fire salvo of 12 rockets	: 44 seconds
» Area coverage	: 1000 m x 800 m
» Shoot and scoot capability	: Fast coming in and out of action (<3 min)
» Crew	: 4

COMPANY : Larsen & Toubro Limited
CONTACT : intl.defence@larsentoubro.com
NSN 1055720251323



SARVATRA BRIDGE SYSTEM



Description:

Sarvatra bridge system is an optimally designed scissor launch system with state of art hydraulic system which provides multi span capability. It is a high mobility launching platform suitable for heaviest military traffic with advanced hydraulics which ensures continuous and smooth operation. Its double "A" shaped trestle provides excellent stability and can be constructed with minimum crew.

Specifications:

- » The vehicle is BS II (EURO II) 8-cylinder, 'V' type, air cooled engine, 402 HP (300 kw) @ 1800 rpm
- » Swinging half axles for better cross country mobility
- » Rear Cabin with dual drive facilities
- » All wheel drive for maximum traction
- » Left hand drive with 2x10 forward speeds
- » High Mobility Launching platform
- » Suitable for Heaviest Military Traffic
- » Multi Span capability upto 75 meters

COMPANY : BEML Limited
CONTACT : mx@beml.co.in
NSN 5420720473569



PONTOON BRIDGE SYSTEM



Description:

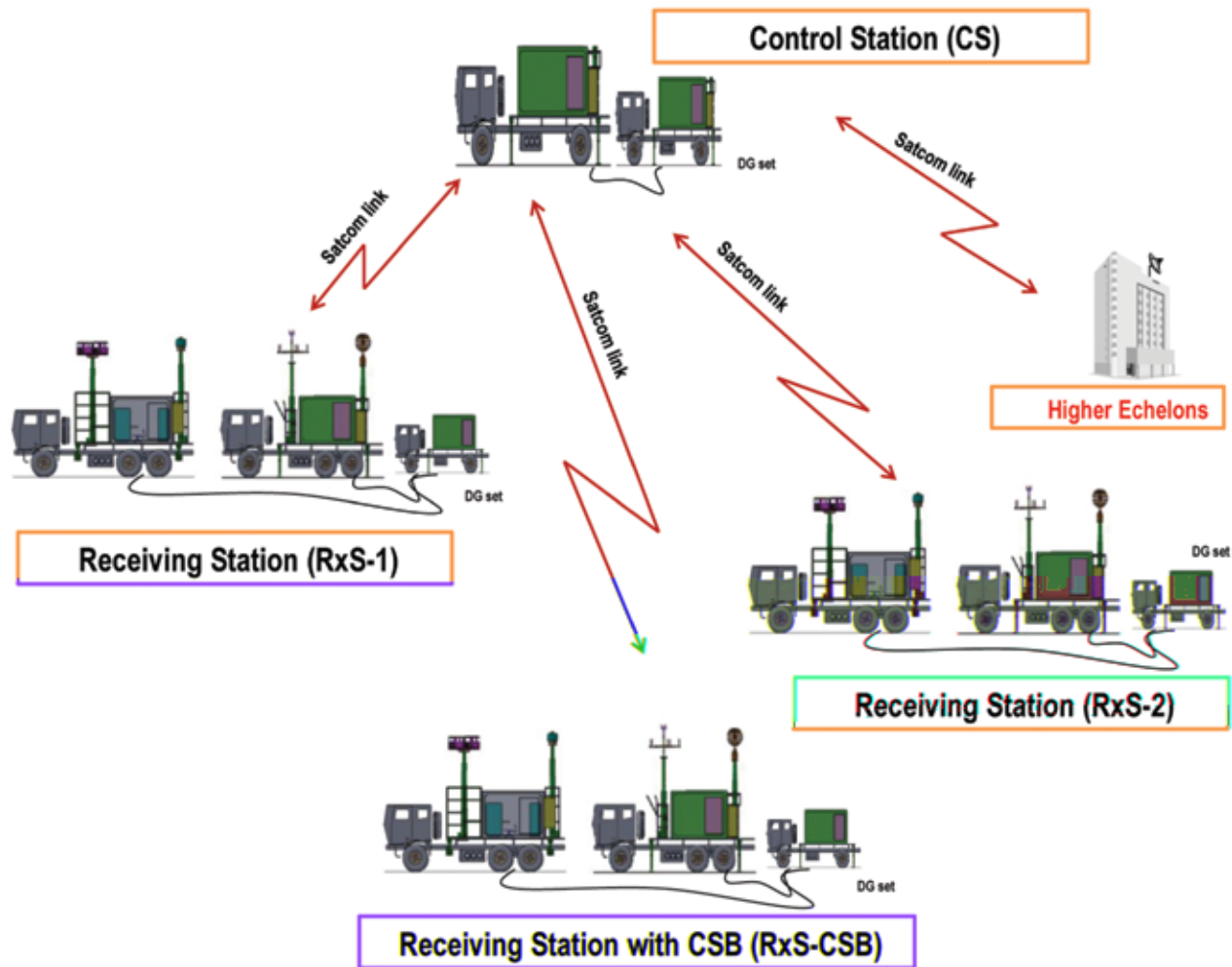
The bridge has a maximum load carrying capacity of 60 tonnes and can transport military vehicles over water obstacles and marshy grounds. The midstream members are joined together to form the floating part and the bank. The shore members are connected to the midstream members and serve as the transition section between the floating part and the bank.

Specifications:

- » The vehicle is 8 Cylinder, "V" type, Air-cooled engine, 402 HP(300kw) @ 1800 rpm, Max Torque: 1830 Nm @1200 rpm.
- » Transmission: 10 forward and 2 reverse gears.
- » Suspension: Front: Leaf spring type and Telescopic shock absorbers. Rear: Leaf spring.
- » Brakes: Two circuit drum air brakes with cam type actuator.
- » Steering: Mechanical, Power assisted by hydraulic steering.
- » Bridge length : 227 meters

COMPANY : BEML Limited
CONTACT : mx@beml.co.in
NSN 1945720487038

GROUND-BASED MOBILE ELINT SYSTEM (GBMES)



Description:

Ground Based Mobile ELINT System is capable of detection, monitoring, location fixing, complete analysis of RF signals in the frequency range of 70 MHz to 40 GHz. The System is configured on indigenously developed Antennae, DF & Receiver Technologies.

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 6350720487301

Specifications:

- » The system is fully automated, software intensive with a facility for manual override when required
- » Interception of Radar emitters in 70 MHz to 40 GHz band
- » Capability to monitor at least 200 emitters simultaneously.

INSTAVEST G6

Advanced Tactical Vest
with Quick Release



Description:

The 6th generation Instavest offers protection from handgun ammunition, RCC's and FSP's at vastly improved energy absorption and dissipation levels. The unique patented quick release (QR) system in Instavest G6 enables swift doffing and donning of the vest in emergency situations. It offers ballistic protection from handgun ammunition, RCC's and FSP's at vastly improved energy absorption and dissipation levels.

Specifications:

- » WEIGHT < 5 Kgs
- » Made from 6th generation ultra-light weight Ammoflex armour

COMPANY : MKU Limited
CONTACT : r.gupta@mku.com
NSN 8470720487368

ADVANCED COMBAT HELMETS



Description:

Boltless advanced combat helmets are manufactured using special trauma reduction technology that results in just 10 mm blunt trauma which is nearly 40% lower in comparison to a standard helmet. The No Holes – No Drill technology used in MUKUT helmets ensure zero compromised areas in the helmet shell providing uniform protection across the ballistic shell perimeter, thus eliminating the risk of lethal injuries due to secondary fragments as compared to traditional bolted helmets in situations where the high velocity threat hit the bolts.

Specifications:

- » Flame & UV resistant.
- » Manufactured using Non Toxic material as per 2002/61/EC.
- » Jointless rubber edge guard.
- » Compatible with NVD, Gas Masks, Communication systems etc.
- » Level IIIA protection with V50 up to 700 m/s

COMPANY : MKU Limited
CONTACT : r.gupta@mku.com
NSN 8415720487365

BALLISTIC SHIELDS



Description:

Handheld and trolley mounted ballistic shields with large view ports and transparent armour offer enhanced coverage during counterterrorism, insurgency and riot control operations.

Specifications:

- » Made from non-toxic materials
- » Fire, UV resistant
- » Ballistic glass on view port for clear vision and enhanced field view (FOV)
- » Abrasion resistant Neoprene rubber edges
- » Available in flat or curved (750 R or 540 R) geometry
- » Ambidextrous handle with nylon neck and shoulder strap

COMPANY : MKU Limited
CONTACT : r.gupta@mku.com
NSN 4240720487364

BALLISTIC PROTECTION



Description:

- » Advanced Ceramic B4C (CaraSTOP) Plates
- » Tiles for Light Weight Armor
- » Personal Ballistic Protection:
 - » Ballistic Vest & Jackets
 - » Armor Plates
 - » Ballistic Helmets
 - » Ballistic Shields
- » Light weight armor solutions for Aircraft /Helicopter /Vehicle/ Boat.
- » Tank, Artillery and Mortar Munitions.

Specifications:

- » Body Armor & Ballistic Shields: Protection of NIJ Level IIIA to IV
- » Armor Plates: Stand alone or ICW with protection of NIJ Level III, III SP and IV, all shapes and sizes
- » Ballistic Helmets: For protection of NIJ Level IIIA, III, III+ & fragments, all designs (PASGT, ACH, MICH, TCH)
- » Armor solutions: For protection of STANAG Level –1 to 5 and Blast Protections.
- » Tank ammunition: 120mm and 125mm (FSAPDS and HESH)
- » Artillery ammunition: 105mm and 155mm (LZ & HZ), 130mm (FVC and RVC)
- » Mortar Bomb ammunition: Augmented Cartridges and Transparent Celluloid Sheets

COMPANY : SM Carapace Armor
 CONTACT : contact@smgroupindia.com
 NSN 2590720500391



PROTECTIVE EQUIPMENT FOR LAND SYSTEM

Personal Protection



- » **Ballistic Vests & Shields** – Protection Level NIJ IIIA to IV with Weight Distribution System and Quick Release Mechanism.
- » **Armor Plates** – Standalone and ICW solutions with Protection Level III, III+ and IV in all Shapes & Sizes.
- » **Ballistic Helmets (Patented)** – For Protection Level IIIA, III, III+ & fragments, all shapes (PASGT, ACH, MICH, TCH) comes with Advanced Pad Systems, Quick Release Mechanism and Ratchet Harness System and Special Helmets for Airborne Applications.

Vehicle armor

Materials for Armor

Ammunition



- » **Tank Ammunition** – 120 mm and 125 mm (FSAPDS & HESH)
- » **Artillery Ammunition** – 105 mm and 155 mm (LZ and HZ), 130 mm (FVC & RVC)
- » **Mortar Ammunition** – Augmented Cartridges and Transparent Celluloid Sheets

PERSONNEL PROTECTIVE EQUIPMENTS



Description & Specifications::

- » **Personal Protective Equipment:** It includes Vest- Level III-A
- » **Ballistic Helmets:** For protection of NIJ Level IIIA & fragments, all designs (PASGT, MICH, SF helmet)
- » **Armour Plates:** Stand alone or ICW with protection of NIJ Level III, III SP and IV, all shapes and sizes.
- » **Ballistic Protection Products:** Demining Suit, Deming Vest, Demining Apron, Bomb Blanket @ V50- 250 m/s - 650m/s, Ballistic Shield- Level III-A, III and IV, Ballistic Panels and Bomb Suit
- » **Vehicle Armouring:** It provides protection from B4- B7 Threat Level

- » **Armour Solutions:** For protection of STANAG Level- 1 to 5 and Blast Protections
- » **Technical fabric /Technical Aramid Fabric:** We are one of the world's most vertically integrated company by having its own ability to weave High Performance Fabric Kevlar in its state of the art manufacturing facilities.
- » **Tactical Assault Vest Combat Gear:** It includes products like Military Boots, Military Uniform, Backpack and other Tactical Gears like Ballistic Goggles, Visor etc.).

COMPANY : Indian Armour Systems Pvt. Ltd.
CONTACT : info@indianarmour.com



SMALL CALIBER AMMUNITIONS



Description & Specifications:

Manufacturing high quality military grade small caliber ammunition of NATO and Russian Standards for both air and ground operations. Aim is to provide continuous supply of high-quality ammunition to military and civilian markets. Presently manufacturing small caliber ammunition with following calibers:

- » 9 x 19 mm
- » 5.56 x 45 mm
- » 7.62 x 39 mm
- » 7.62 x 54R
- » 7.62 x 51 mm
- » .338 Lapua
- » 12.7 x 99 mm
- » 12.7 x 108 mm

COMPANY : Hughes Precision Manufacturing Pvt. Ltd.
CONTACT : avinash.rahi@hughesprecisionm.com



2017-2018

COMPANY : Solar Industries India Limited

COMPANY : Alpha Design Technologies Pvt. Ltd.

solar@solargroup.com

alphacorp@adtl.co.in

RAJAK - THERMAL IMAGING AND NIGHT VISION DEVICES



DESCRIPTION:

A wide range of EO systems viz. Night Vision Devices, Uncooled & Cooled Thermal Imaging Systems, 3rd Generation Image Intensifier Tubes of FoM $\geq 1800+$ and complex Electro-Optic (EO) payloads to meet every requirement at the best price / performance ratio.

SPECIFICATIONS:

- » Long / Ultra Long Range Surveillance System
- » Multipurpose Night Vision Monoculars and Binoculars
- » Aviation Goggles
- » Thermal / Night Vision Weapon Sights
- » Cooled / Uncooled Thermal Handheld Monoculars, Binoculars Multifunction Imagers
- » Driver's Night Sights

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

MULTI SPECTRAL CAMOUFLAGE NET (MSCN)



Description:

Multi Spectral Camouflage Net (MSCN) is used for protection of Defence Equipment's against Arial & Ground based Electro-Magnetic Sensors, Surveillance devices.

Specification:

- » Provide adequate protection from visual aids
- » Provide similar IR properties to surroundings.
- » Less than 30% thermal Transmission in the wavelength band 3-5 μm and 8-12 μm
- » Thermal Signature: ± 8 Deg C in the wavelength band 3-5 μm and 8-12 μm
- » Radar Transmission loss 6dB for both way
- » Flame resistant: Self – Extinguishing
- » Resistant to wind, low temperature, fungus growth, hydrocarbons etc.

COMPANY : Entremonde Polycoaters Limited
CONTACT : epl@entremonde.com,
eplnsk@entremonde.com

ANTI-IRR SYNTHETIC CAMOUFLAGE NET (SCN)



Description:

Anti-IRR Synthetic Camouflage Net (SCN) is used particularly by forces for protection of Defence Equipment's against Arial & Ground based Visual & Infra-red Surveillance devices.

Specification:

- » Provide adequate protection from visual aids
- » Provide similar IR properties to surroundings.
- » Flame resistant: Self – Extinguishing
- » Resistant to wind, low temperature, fungus growth, hydrocarbons etc.

COMPANY : Entremonde Polycoaters Limited
CONTACT : epl@entremonde.com,
eplnsk@entremonde.com

MULTI SPECTRAL PERSONAL CAMOUFLAGE EQUIPMENT (MSPCE) GHILLIE SUIT



Description:

Ghillie Suit is used by defence Personal particularly by the military to conceal personal and to enable them to blend in with their surroundings & protect them against Arial & ground based surveillance devices such as NIR camera, Thermal Camera.

Specification:

- » Durable and very good colour retention, Matt finish
- » Resistant to fire
- » Two piece suit easy to wear and down
- » Light Weight (Less than 2.5 Kg)

COMPANY : Entremonde Polycoaters Limited
CONTACT : epl@entremonde.com,
eplnsk@entremonde.com



EW, COMINT & ELINT SOLUTIONS



Description:

Custom solutions for Electronic Warfare (EW), Communications Intelligence (COMINT) and Electronic Intelligence (ELINT). These solutions can be either vehicle based (Tactical) or static ground based (Strategic) depending on specific requirements. The solutions include ESM, Direction Finding (DF), Location Fixing (LF) and ECM capabilities in the frequency range of 1 MHz to 40 GHz. The solutions are capable of addressing all types of narrow and broadband communication systems, including cellular and satellite communication systems, as well as radar systems.

All sensors in each system are integrated via command & control software and unified sensor data is presented to users through Graphical User Interfaces (GUIs) to allow user-friendly, granular control of the system. Sensor data is presented to the users in easy to understand and intuitive graphical displays which are also customised as per the customer's specific requirements.

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

To assist the customer extract useful intelligence from the multiple sensors in a solution a Data Analysis Suite has been developed in-house. This suite consists of GIS tools, Speech processing tools and Data fusion tools which are provided as part of the custom solution.

Specifications:

- » Covers all types of Communication and Radar systems from 1 MHz to 40 GHz.
- » Capable of ESM including Direction Finding (DF)/ Location Fixing (LF) and ECM.
- » Fitted in ISO shelters for easy mounting on vehicles.
- » Command and control software for easy tasking and operations of all EW sensors.
- » Intuitive and easy to use Graphical User Interface (GUI) for tasking and operating the system.
- » Optimally system engineered so as to meet all SWaP (Size, Weight and Power) constraints required by the customer for a tactical EW system.

MEDIUM RANGE SURFACE TO AIR MISSILE (MRSAM) MOBILE LAUNCHER SYSTEM (MLS)



Description:

The Mobile Launcher System (MLS) for MRSAM Weapon System, jointly developed with DRDO, is a trailer / HMV mounted platform for Launching MRSAM missiles, housing the Launch Control System (LCS), up to eight (8) Canisterised Missiles (CMs), Intra Fire Unit communication system for communication with the Combat Management System (CMS), and other necessary equipment. A single Trailer carries the entire Launch system including its power generation system.

The MLS is placed into and out of action by a Crew / Operator team preparing it for operations including Missile Launch. Launching is done only by the CMS, which communicates with the MLS either by

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

Other manufacturer:

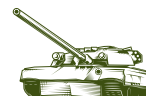
COMPANY : Larsen & Toubro Limited
CONTACT : intl.defence@larsentoubro.com

cable or by wireless communication. The MLS system is composed of two main sub-systems, namely Towing Vehicle (MLS Vehicle) and a Trailer Platform. The Towing Vehicle / Prime Mover tows the semitrailer which carries all MLS operative units as well as some support equipment.

Army version of MRSAM Launcher is a Containerised System mounted on an 8x8 High Mobility Vehicle.

Specifications:

- » All Electric Drives
- » All Weather Operations
- » Dual redundant Synchronised onboard Power Source
- » Back-up Power for Missile interface of 10 minutes at NTP
- » Brushless Motor & Drive for Erection System
- » Mast of 13.5m height for Intra Firing Unit Communication
- » Deployment without Prime Mover for Long duration in trailer mounted configuration



MINE PROTECTED ARMoured PERSONNEL AMBULANCE



Description:

- » A 6 x 6 Mine Resistant Ambulance equipped with advance lifesaving systems.
- » All equipment as per international medical standards.
- » Additional inverter to ensure uninterrupted functioning of equipments in case of disruption in primary supply.

Specifications:

Defibrillator, ECG, Oxygen delivery system, Ventilator, Resuscitation kit, Examination bed, Critical patient stretcher etc.

Gross Vehicle Weight	: 19000 Kgs
Payload	: 2000 Kgs
Ballistic protection	: STANAG 2
Blast protection	: STANAG 4
Ground Clearance	: 400 mm
Max Speed	: 90 Kmph
Brakes	: Fully Pneumatic, ABS
Run Flat Insert	: 50 / 100 kms FINABE

COMPANY : Mahindra Defence Systems Limited
CONTACT : defencesystems@mahindra.com
NSN 2350720305488

LIGHT BULLET PROOF VEHICLE (LBPV)



Description:

Light Bullet Proof Vehicle (LBPV) meant for providing protected mobility to troops in counter insurgency areas and for carrying detachment loads. LBPV is having spacious driver and Co-driver area with excellent ergonomics and good visibility. LBPV is having ample storage for Ammunitions and detachment loads and option of roof suspended outward facing seats for crew.

COMPANY : Mahindra Defence Systems Limited
CONTACT : defencesystems@mahindra.com

Specifications:

Seating Capacity	: 2+4 / 2+6 (Based on seating configuration)
Size (L X W X H)	: 5.25 X 2.2 X 2.3 Meter
Gross Vehicle Weight	: 5500 Kgs
Payload	: 1000 Kgs
Ballistic Protection	: STANAG 1 / STANAG 2
Blast Protection	: STANAG 1
Max Speed	: 105 Kmph
Drive Configuration	: 4 Wheel Drive RHD / LHD
Suspension	: All Wheel Independent Suspension
Optional Features	: CTIS, Self-Recovery Winch, Smoke Grenade Discharger, Drive Assist Camera
Run Flat Insert	: 50 / 100 kms FINABEL

MARKSMAN



Description:

Marksman is Armoured Capsule based Light Bulletproof Vehicle to provide protection to personnel of Defence, Para Military and Police Force against small arms and under belly grenade attacks.

It has capability to be used in counter terrorist as well as conventional roles including urban policing requirements.

Specifications:

Seating Capacity	: 2 + 4
Size (L X W X H)	: 4.6 X 1.83 X 2.2 Meter
Payload	: 600 Kgs
Ballistic Protection	: STANAG 1
Blast Protection	: STANAG 1
Max Speed	: 120 Kmph
Drive Configuration	: 4 Wheel Drive RHD / LHD
Optional Features	: Run Flat System, Self-Recovery Winch, : Drive Assist Camera

COMPANY : Mahindra Defence Systems Limited

CONTACT : defencesystems@mahindra.com

RAKSHAK PLUS



Description:

An effective solution for security forces deployed in counter insurgency and anti-militancy operations.

Rakshak Plus is a Light Bulletproof Vehicle to provide protection to personnel of Defence, Para Military and Police Force against small arms and under belly grenade attacks.

It has capability to be used in counter terrorist as well as conventional roles including urban policing requirements.

Specifications:

Seating Capacity	: 2 + 4
Size (L X W X H)	: 4.5 X 1.83 X 2 Meter
Payload	: 600 Kgs
Ballistic Protection	: STANAG 1
Blast Protection	: STANAG 1
Ground Clearance	: 200 mm
Max Speed	: 120 Kmph
Drive Configuration	: 4 Wheel Drive RHD / LHD
Optional Features	: Run Flat System, Drive Assist and PTZ Camera, Wire mesh on all BP Glasses.

COMPANY : Mahindra Defence Systems Limited

CONTACT : defencesystems@mahindra.com



REMOTELY CONTROLLED WEAPON STATION (RCWS)



Description:

A remote controlled weapon station (RCWS) is a remotely operated weaponized system for light and medium-calibre weapons which can be installed on ground combat vehicle or sea- and air-based combat platforms. Such equipment is used on modern military vehicles, as it allows a gunner to remain in the relative protection of the vehicle.

RCWS is bore sighted with an optics module with a Laser Range finder to get distance of the target to be engaged. The gunner station is equipped with Fire Control System (FCS) that enables the gunner to move the weapon system by joystick and control in display screen, remote operation for cocking, safety latch and trigger.

Specifications:

System compatible for in-service weapon	: -7.62 MMG
Azimuth	: 360° @60°/sec (max)
Elevation	: +60° to -20° @60°/sec (max)
Optics Module	: 32X Day cam, TI @ DRI 3.8-1.8-0.8km (NATO vehicle), LRF @5km 2-axis stabilization
Weight	: <125Kg without Weapon and Ammunition
Ballistic calculator for projectile	
Configurable No fire zone	
Multi-target engagement feature	
Designed to comply MIL 461, 810/ JSS55555	

COMPANY : Mahindra Defence Systems Limited
CONTACT : defencesystems@mahindra.com





AI POWERED MEDICAL HEALTH DIAGNOSTIC SYSTEM (MHDS)



Description:

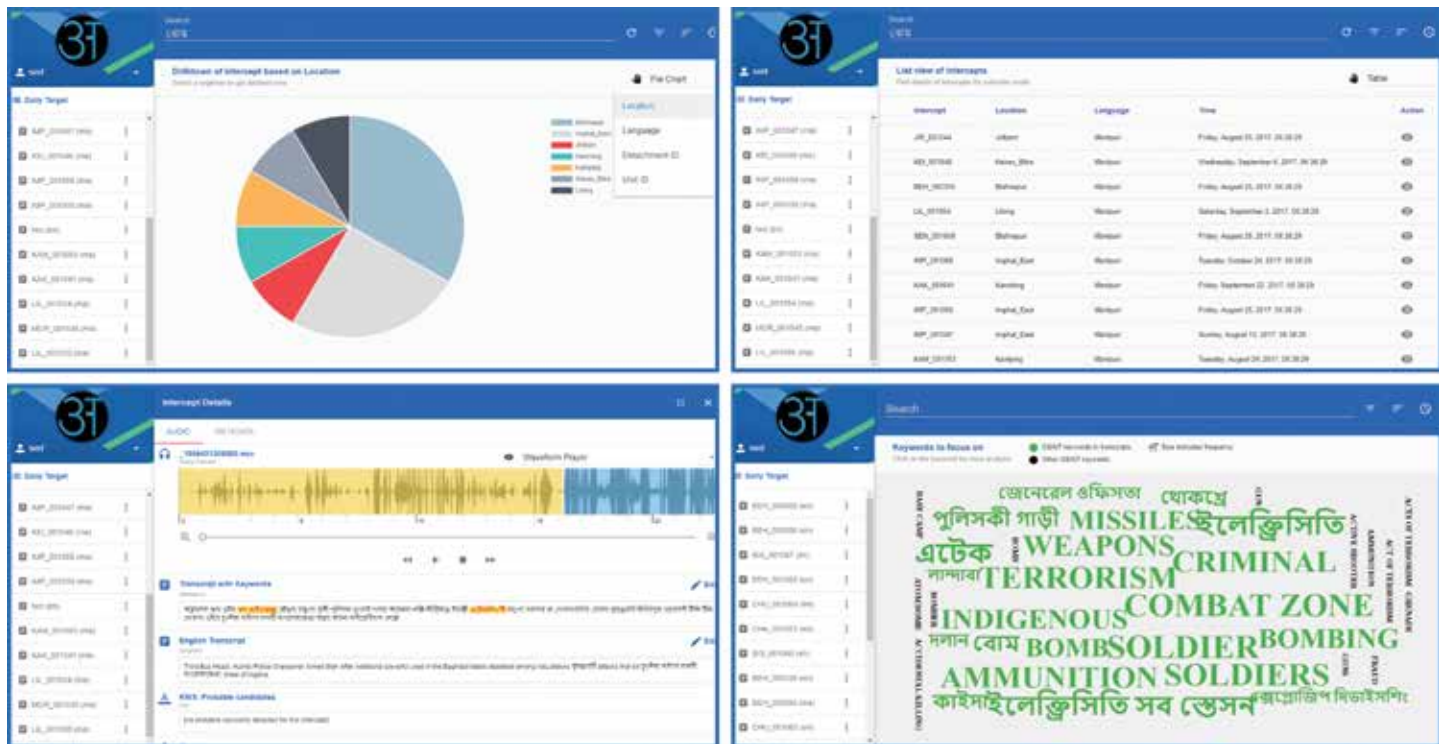
Mobile health and diagnostic station housed in a 20 feet container on a high mobility platform (BEML TATRA 8x8 / 6x6) with artificial intelligence (AI) powered diagnostic system for troops in field. This diagnostic station has the following major features to cover medical diagnostic needs of troops in forward posts, especially in high altitude areas. It provides Computer Aided Diagnosis using AI and also obtain expert consultation from higher echelon hospitals or from a cloud based tele consultation system. It can be remotely connected to a medical data base too. The unit is provided with a dust free clinical environment, Air conditioning and generate back up.

Specifications:

- » Artificial Intelligence based Chest X-Ray Diagnosis
- » Artificial Intelligence based diagnosis of Eye Analysis and Diabetic Retinopathy
- » Computer based diagnosis (CAD)
- » Digital Radiology
- » Cardiograph
- » Pathology Laboratory
- » Point of Care Devices
- » Digital Fundus Camera
- » Digital Microscope
- » Cloud based Tele-Consultation System

COMPANY : BEML Limited
CONTACT : mx@beml.co.in

ANUVADAK - BIG DATA ANALYTICS WITH DEEP LEARNING-CONVERTED



Description:

ANUVADAK is an indigenous Big Data Analytics Platform with Deep Learning designed specifically to meet the needs of Military and Homeland Security agencies. It is capable of handling large volumes of structured and unstructured data (audio, video, images and text) captured by different systems. ANUVADAK contains variety of speech analytics algorithms for Automatic Speech Recognition, Machine Translation, Keyword Spotting, Speaker Identification etc.

The ability of automatically processing large amounts of data, reduces the burden on human operators and increases their efficiency and effectiveness. ANUVADAK platform also interfaces with other analytics solutions for video and image analysis and provides an integrated platform for intelligence agencies.

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

Specifications:

- » Language Identification
- » Automatic Speech Recognition
- » Machine Translation
- » Speaker Identification
- » Keyword Spotting
- » Object Detection
- » Face Recognition
- » Modular and Scalable Architecture

155MM/52 CALIBRE MOUNTED GUN SYSTEM



Description:

155mm/52 calibre Mounted Gun System comprises of an 8x8 truck on which the gun is mounted thereby provides excellent tactical and strategic mobility. The gun can fire upto 55km with a maximum of 6 rounds per minute or a burst of 3 rounds in 16 seconds or sustained firing of 2 rounds per minute. With 360° traverse angle and elevation arc of -3° to +72° the gun provides maximum coverage once deployed for firing.

An on-board crane helps in automatic loading / unloading of ammunition on the magazine and ammunition rack. State-of-the-art Rugged Tactical Field Computers control the Ballistics and Gun Fire Modules. The Out-triggers, Gun and Crane run on Hydraulics system that are centrally controlled and monitored for safety interlocks. On-board systems like Inertial Navigation System, Electro-Optic Sight for Direct Firing and Muzzle Velocity Radar help in accurate positioning, detection, ranging and Firing of the gun.

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

Specifications:

- » Main Weapon
 - Barrel Length : 52 calibres
 - Calibre : 155mm auto-frettaged monobloc
 - Elevation : -3° to +72°
 - Traverse : 40° Rt and Lt
 - Range
 - 31km with Boat Tail projectile
 - 42km with Base Bleed projectile
 - 55km with V-LAP projectile
- » Ammunition Handling
 - Electronically controlled Automated Ammunition Handling System
 - Magazine with 3 projectiles
 - Crane for Ammunition Handling
- » Laying and Navigation
 - Ring Laser Gyro based Inertial Sensor
- » Vehicle Platform
 - Tata 8x8 High Mobility Vehicle



105MM MOUNTED GUN SYSTEM



Description:

105mm Mounted Gun System comprises of a 105mm Field Gun on a 6x6 High Mobility Vehicle with automated operations through electric drives for Elevation and Traverse, interfaced with a Gun Laying Computer.

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

Specifications:

- » 4 Hydraulically Operated Jacks for Vehicle Stabilisation during firing
- » Control and Operating Panel for Hydraulic System
- » Auto-levelling of the platform
- » Electronic Control and Positioning System
- » Elevation: -3° to $+72^{\circ}$ (other than over the cabin)
- » Zone of Fire: 360°
- » Max Range: 17.96km
- » INS-based Barrel Pointing System
- » INS-based Navigation System
- » On-board Ballistic Computer for Autonomous Operation with "shoot & scoot" capabilities
- » Reduced Crew Size

ADVANCED AIR DEFENCE (AAD) MOBILE LAUNCHER SYSTEM (MLS)



Description:

The AAD MLS is a Multi-technology Weapon Platform jointly developed along with DRDO. It is an all-electric Launcher designed for all-weather and all-terrain day / night operation. The Launcher is mounted on a 12X12 HMV chassis and is designed to carry, orient and fire Six Canisterised Missiles in Single or Salvo Mode, from a stationary inclined launch position.

A single truck carries the entire Launch Control System along with its power generation system. The AAD MLS provides a dual redundant communication link to the Launch Control Complex (LCC) comprising an RF Wireless Link and a Physical Link.

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

STATE-OF-THE-ART TECHNOLOGY:

- » PMA (Permanent Magnet Alternator) for DG set coupling
- » Electronic Synchronisation between both Elevation Actuators
- » Brushless DC Servo Motors
- » Electro-Mechanical Outrigger Jacks for Stabilisation and Auto-Leveling
- » VPX-based Controller

Specifications:

- » High positional accuracy and Fast Coming-into and -out of Action
- » Launcher protection from Missile exhaust plumes & debris using a Jet Deflector
- » Auto and Semi-Auto Modes of Operation
- » Electronic Controls ensure Automatic Operation including Safety Interlocks, Status Monitoring, Health Checks, BITE and Diagnostics to enable quick troubleshooting



ABHEDYA – BORDER PROTECTION, COASTAL SECURITY & CRITICAL INFRASTRUCTURE SECURITY SOLUTIONS



Description:

ABHEDYA offers state-of-the-art Border Protection, and Coastal / Critical Infrastructure Security. It delivers maximum Security by providing Security Forces with the capability to obtain, collate, correlate and evaluate inputs from various Sensors and Surveillance Systems in near real time. The Command and Control System provides a fast-response Decision Support System that provides a consolidated view of the Processed data to the higher echelons. This advanced Security Solution helps in safeguarding Assets, which are vital to the Nation's economy and Strategic interests, by accurately detecting Threats and providing Actionable Intelligence to Security Agencies. The state-of-the-art Security apparatus includes the facility of Data Storage through the main Data Centre and redundant Data Centres for Disaster Recovery.

Specifications:

- » Integration with a variety of advanced Sensors
- » Real time Common Operating Picture
- » Ruggedised Display Panel (Tablet) for Mobile Operations
- » Simultaneous Real-Time Live Monitoring of Cameras & 24 x 7 Recording
- » Intelligent Video Analytics
- » Intelligent Motion / Intrusion Detection
- » State-of-the-art Hardware Infrastructure
- » Extensive Reporting and Analysis capability
- » Display of Status and Health indication of all integrated Sensors
- » Multiple Regions of Interest (ROI) for each Fixed Camera
- » Slew to Cue Capability
- » Audio Visual Alarms based on inputs from multiple integrated system peripherals
- » Multi-sensor Data Fusion
- » Map display of the Perimeter with all integrated Sensors
- » Integration of existing Border / Perimeter Flood-lights for Switching Off / On from C2 Centre
- » Easy and Intuitive User Interface for Security Personnel

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com



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ADVANCED TOWED ARTILLERY GUN SYSTEM (ATAGS)



Description:

The Advanced Towed Artillery Gun System is a 155mm/52 calibre artillery weapon system jointly developed with ARDE, DRDO. It incorporates futuristic technologies in Electrical, Electronics, Mechanical Design and Analysis, that provide the systems with capabilities such as Self Propelled Mode, Rate of Fire (Burst, Intense and Sustained), Automatic Ammunition Handling System including Crane and All Electric Drives for Azimuth and Elevation to ensure reliability in field over prolonged use.

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

Specifications:

- » 155mm 52 Calibre Gun System
- » 25 litres chamber. Enables firing upto Zone-7 BMCS
- » Firing range of 48.074km (HE-ERFB BB) & 38.569km (HE-ERFB BT)
- » Zero backlash All-Electrical Drives System
- » Elevation Angle: -3° to +75° with the speed of 5°/s
- » Ground clearance: 400mm
- » Self-propelled capability with a speed of 20kmph
- » Electronically controlled Automated Ammunition Handling System
- » Rate of Fire
 - Burst – 5 rounds in 60 secs
 - Intense – 10 rounds in 150 secs
 - Sustained – 60 rounds in 60 mins

AKASH ARMY LAUNCHER (AAL)



Description:

Akash Army Launcher (AAL) is a multi-technology Weapon Platform for Akash missiles, jointly developed along with DRDO. AAL is a Mobile Launcher System capable of transporting and launching upto three Akash Surface to Air Missiles which can be fired in Single or Salvo Mode.

AAL is an all-weather and day / night system which comprises of a self-powered and fully automated electro-mechanical launching system mounted on a 8x8 HMV. AAL is a fully ruggedised system, which can operate in harsh environmental and terrain conditions. It's rapid coming-into and -out of action time makes AAL as one of the most preferred Missile Launch Platforms.

Four AALs form a part of a Firing Unit which also comprises a Troop Control Centre (TCC), Troop Level Radar (TLR) and support vehicles such as Transporter-cum-Loader Vehicle (TLV) and Troop Equipment Maintenance Vehicle (TEMV). AAL provides a dual-redundant Communication Link to the TCC comprising an RF wireless link and a physical link.

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

Other manufacturer:

COMPANY : Larsen & Toubro Limited
CONTACT : intl.defence@larsentoubro.com

Specifications:

- » All-Electric Drive System for Azimuth, Elevation and Platform Stabilisation
- » High positional & tracking accuracy
- » Transportable by rail, road, air & sea
- » Fully Automatic checkout & auto launch of missiles
- » Remote-Controlled tracking of targets & launching of missiles
- » Continuous 360° operation in azimuth
- » Powered by an on-board DG set or a PTO coupled alternator or an external power supply
- » Ease of maintenance & LRU level repair by replacement
- » Ruggedised & reliable VME based controller
- » Interchangeable (Azimuth, Elevation, Outrigger) Brushless Servo Motors and Amplifiers
- » Electro-Mechanical Outrigger jacks for stabilisation of launcher
- » Auto-Leveling of launcher



TATA GENERAL SERVICE TRUCK

Description:

The All-wheeled drive Tata LPTA 715 has a high power to weight ratio of 20 HP/T and can be used in multiple logistical roles like troop

Specifications:

Brief Specifications	Tata LPTA 715 4X4 (LHD & RHD)	Tata LPTA 1628 4X4 (LHD & RHD)
Power	155 HP @ 2500 RPM	265 HP @ 2500 RPM
Torque	590 Nm @ 1500 RPM	970 Nm @ 1200-1700 RPM
Transmission	Manual (6 F + 1 R)	Manual (9 speed with 1 crawler gear)
Brakes	Full Air S-Cam	Full Air S-Cam, with ABS
Gross Vehicle Weight	7.7T	16T
Payload	1.5 – 2.5T	5 – 7.5T
Ground Clearance	300 mm	350 mm

TATA MULTI-AXLE RANGE (6X6, 8X8, 10X10 & 12X12)



Description:

Tata Defence has supplied 2000+ units of LPTA 6x6 with Material Handling Crane to the Indian Army, making it the single largest order of multi-axle trucks bagged by any private OEM in land systems in India. This High Mobility 6x6 Truck from Tata Defence is designed to excel in extreme on and off-road conditions and has completed a total trial duration of 25 months with the Indian Army. Tata LPTA 6x6 & 8x8 can be customized for a wide range of applications like Missile Carrier, Multi Barrel Rocket Launcher (MBRL), Missile Firing Unit (MFU), Medium Recovery Vehicle, Medium Range Surface to Air Missile (MRSAM), Short Range Surface to Air Missile (SRSAM), Low Level Quick Reaction Missile vehicle (LLQRM), Command Post & Communication system as well as for Strategic Missile Programs & Bridging Programs.

Tata LPTA 12x12 is a highly specialized and fully indigenous vehicle platform developed for catering to strategic missile programs requiring specially designed attributes to make it suitable as a launch pad for LRSAM, Cruise Missiles and subsonic missiles. The higher payload and larger loading area provides much needed flexibility to the integration team of end user. This platform is a true testimony to realizing the 'Make in India' initiative of Government of India.

All the above mentioned platforms can be customized to meet several program-specific needs and is equipped with features like CTIS, NBC kit and

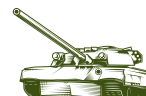
Self-recovery winch for off-road terrains and extreme climatic conditions characterizing mission-critical applications like Launchers, Command post, Communication system, Special Purpose Transporter.

Specifications:

Brief Specifications	Tata LPTA 6X6 (LHD & RHD)	Tata LPTA 8X8 (LHD & RHD)	Tata LPTA 12x12
Power	375 HP @ 2100 RPM/ 450 HP @ 2100 RPM	375 HP @ 2100 RPM / 450 HP @ 2100 RPM	500 HP @ 2200 rpm (+/- 50 rpm)
Torque	1550Nm @ 1300RPM/ 1627Nm @ 1300 RPM	1550Nm @ 1300RPM/ 1627Nm @ 1300 RPM	Min 1900 Nm at 1400 rpm (+/- 100 rpm)
Transmission	Manual (Automatic Optional)	Manual (9 speed with 1 crawler gear)	Automatic transmission system
Brakes	Full Air S-Cam	Full Air S-Cam	Full air S cam Brakes with ABS
Gross Vehicle Weight	23T	33.5/ 39T	62T Kg with 16R20 tyre
Payload	12T	19.5/ 24T	41T with 16R20 Tyre
Ground Clearance	360 mm	390 mm	390mm

COMPANY : Tata Advanced Systems Limited

CONTACT : pranav.singh@tataadvancedsystems.com



TATA ARMoured PERSONNEL CARRIER 4X4 (MINE PROTECTED VEHICLE)



Description:

Tata Armoured Personnel Carrier (with mine protection) with a 4x4 configuration, is developed to serve as a mine-proof troop transport vehicle, a law enforcement special response vehicle used to counter insurgency, or an escort protection vehicle. With a ballistic protection of NIJ Level III & blast protection higher than STANAG IV, the Tata APC is designed to protect its occupants from threats like ambushes and sudden violent attacks using powerful explosive mines.

Tata APC is in-service with Indian Army.

COMPANY : Tata Advanced Systems Limited

CONTACT : pranav.singh@tataadvancedsystems.com

Specifications:

- » Power: 242 HP @ 2500 RPM
- » Torque: 925 Nm @ 1200-1700 RPM
- » Features:
 - Run Flat inserts
 - Gradeability 30°
 - Four-point harness seat belt for safely holding troops in place
 - Single piece "V" shape hull for deflecting blast intensity away from vehicle
 - Side mounted seats with AC and seating capacity 12+2



MILAN - 2T ATGM



Description:

MILAN - 2T is a man portable (Infantry) second generation ATGM, to destroy Tanks fitted with Explosive Reactive Armour, moving and stationary targets.

Specifications:

- » Highly Reliable
- » Require No maintenance / No Pre-fire checks
- » Light weight
- » Fibre Glass logistic container for transportation of 4 missiles
- » Man portable
- » Ground Launcher
- » Calibre : 115 mm
- » Length : 1123 mm
- » Weight : 7.1 Kg
- » Range : 25 - 1850 m
- » Penetration : >850mm behind ERA
- » Flight Time : 12.5 s
- » Reliability : 95%

COMPANY : Bharat Dynamics Limited
CONTACT : bdbdl@bdl-india.in
NSN 1425720487376

KONKURS – M ATGM



Description:

KONKURS-M is a Second Generation, mechanized infantry ATGM, to destroy Armoured vehicle equipped with Explosive Reactive Armour, moving and stationary targets.

Specifications:

- » Can defeat armoured targets fitted with ERA
- » Can be launched either from BMP-II or from ground launcher
- » Equipped with tandem warhead
- » High hit and kill probability.
- » Length : 1260 mm
- » Calibre : 135 mm
- » Range : 75 - 4000 m
- » Flight time : 19 s
- » Armour Penetration : 800 mm behind ERA
- » Weight : 16.5 Kg

COMPANY : Bharat Dynamics Limited
CONTACT : bdbdl@bdl-india.in
NSN 4935720356856



CYBER SECURITY SOLUTIONS



IP Encryptor:

It provides security at Ethernet and Network Layer by securing the IP data in tunnel and transport mode as IPSec device. In addition to this, it secures the data for point to point network as EtherSec device. Provides LAN, MAN and WAN data security in public network. Provide security for backbone networks and future network centric warfare applications.

Link Encryptor:

Link Encryptor is a full duplex encryption/decryption System, designed to work for various data rates of PDH, SDH, OTU and Ethernet. Provides End to End Encryption for Bulk data and Backbone connectivity for metro, regional, or long-haul Dense-Wavelength Division Multiplexing (DWDM) networks.

Data Diode:

Data Diode creates a physically secure one-way communication channel from the one network to another network by means of unidirectional data transfer with higher performance, reliability and end-to-end security.

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in

Secure Storage (Linux/Windows):

Secure Storage solution provides "data at rest" security & keeps the data encrypted on the storage device at all times and decrypts the data only when it is accessed from the storage, via the solution for the storage Media (Disk Attached storage/ Network attached storage or Storage area Network)

PKI / Token:

PKI solution provides complete Certificate life cycle management functionalities. PKI solution issues, renews, revokes and suspends digital certificates for its users and also maintains record of all transactions. The PKI solution provides security features like Authentication, Confidentiality, Integrity and Non-repudiation.

Trusted Computing Platforms (Server/Workstation/ Laptop/ Tablet):

A High-end computing platform to meet the requirements of secure computing environment by with trusted features like Secure Boot, Platform integrity, encrypted drives, integrated storage, Role based access and tamper proof.

The American Association of State Highway Transportation Officials

METAL INJECTION MOLDED (MIM) COMPONENTS FOR SMALL ARMS



Description

Precision steel and stainless-steel components manufactured through Metal Injection Molding (MIM) technology for a wide variety of small arms and its assemblies. Examples: Sear, Magazine Catch, Thumb Safety, Grip Safety, Ejector, Firing Pin Stop, Sights etc.

COMPANY : NNF Tech Private Limited
CONTACT : d@n-mim.com, nnftech@gmail.com

Specifications

- » Wide varieties of steel and stainless steel such as MIM 4605, MIM 42CrMo4, MIM 4340, MIM 17-4PH, MIM 8620.
- » Components can be hardened by specific heat treatment processes like Hardening & Tempering, Case Hardening, Solutionizing & Age Hardening, Induction Hardening etc. to attain the required hardness specification.
- » Surface finish in blackened condition.
- » The parts are assembled in small arms (like Pistols, Revolvers, Rifles, Air Guns) with calibers .45", 9 mm, .380", 5.56 mm, 7.62 mm, .40" and .22 TCM to name a few.

BHARATULH (HIGH STRENGTH STEEL)

Description

Specification

COMPANY : Bharat Forge Limited

MINE PROTECTIVE VEHICLE / ARMoured PERSONNEL CARRIER



Description

MPV / APC are specially designed and built to meet specific & variable requirements of forces that are affected by severe side & under belly blasts while operating in rough terrain. These are Powered by ruggedized, military grade diesel engine, with 4x2/4x4 Manual/ Automatic transmission options, it can provide blast protection up to 14 Kgs TNT blast under belly & 21 Kgs TNT blast under any wheels and side blast up to 50 Kg TNT. The best in its class of 4 x 4, it has a Kerb weight ranging from 10 - 14 tons & payload capacity of 2 to 4 tons. The vehicle is equipped with a 360 degree rotating armoured turret with modular weapon mounts to meet lethality requirements.

Specifications

- » Military Grade 230 - 280 HP Turbo Diesel Engine
- » Protection
 - 14 Kgs TNT Blast Protection under hull
 - 21 Kgs TNT blast under any wheels
- » 360 degree rotating armoured turret with Modular Weapon Mounts
- » Successfully tested by Indian Military Agencies
- » Ground Clearance : 430 mm
- » Speed : >100 kmph
- » GVW /Pay Load : 10-14 tons/ 2-4 tons
- » Range : Min 800 km

COMPANY : Bharat Forge Limited
CONTACT : contact.defence@bharatforge.com

JV PROTECTIVE CARBINE (5.56 X 30MM)



Description

JVPC a unique calibre weapon for short range operations. Its low recoil provides stabilized firing during rapid firing and can be fired by single hand which is most suitable for concealed area operations.

Specification

- » Calibre, mm 5.56
- » Cartridge, mm 5.56 x 30
- » Overall length close stock, mm 550
- » Overall length open stock, mm 750
- » Firing Mode Single and automatic
- » Effective Firing Range, m 200-300
- » Rate of fire, round/min 700-900
- » Magazine capacity, rounds 30
- » Weight (carbine only), Kg < 3
- » Weight (carbine with full magazine), Kg 3.65

COMPANY : Bharat Forge Limited
CONTACT : marketing@aweil.in

120 MM MORTAR EQUIPMENT & BOMBS



Description

The equipment 120 mm Mortar is a mobile smooth bore, muzzle loaded equipment, firing at a high angle and is specially designed to:

- a. Increase the fighting efficiency of the Mortar regiment and support the infantry with a light and powerful weapon, which can be used over all types of terrain, whatever the condition: that is to say, battle-grounds, mountain warfare and air borne operations.
- b. Give amphibious forces a powerful supporting fire immediately upon loading.

The Mortar can be fired off the bipod as well as off the wheels. The mortar is provided with a firing mechanism, which allows its firing both by lanyard action and by gravity.

The equipment can be towed over any type of ground traversable by the towing vehicles, can be transported by aircraft and parachuted, can be loaded into riverboats or can be broken down into loads and carried either by mules or men. 120 mm Mortar equipment is in-service since 1962.

COMPANY : Advanced Weapons and Equipment India Ltd.
Munitions India Ltd.

CONTACT : exports@munitionsindia.co.in
NSN 1015720301134



155 MM SHARANG ARTILLERY GUN



Description

SHARANG is an up-gunned 155 mm x 45 Caliber Gun developed through in-house R&D by up-gunning the existing 130 mm M46 Gun System. SHARANG is capable of achieving a range of more than 36 km. The up-gunned system is a proven accurate and reliable gun system and has also been accepted by Indian Army. The weapon system is simple to operate and maintain. The Sharang Towed 155/45 Cal Gun is designed for worldwide service under all climatic conditions and can fire all existing standard 155 mm ammunition. 155 mm Sharang Artillery Gun is in-service since 2020.

Specification

GENERAL

» Weight in traveling position	: 8450 Kg
» Length in traveling position	: 11840 mm
» width in traveling position	: 2450 mm
» Height in traveling position	: 2240 mm

COMPANY : Advanced Weapons and Equipment India Ltd.
CONTACT : marketing@aweil.in

» Ground Clearance	: 275 mm
ORDNANCE	
» Caliber	: 155 mm
» Barrel Length	: 7700 mm (Including Breech ring)
» Tube Length	: 7035 mm
» Chamber Volume	: 25.7 L
» Number of grooves in bore	: 48
» Rifling length	: 5851 mm
» Groove Width	: 6.6 mm
» Groove Depth	: 1.2 mm
» Width of land	: 3.5 mm
» Type of rifled bore	: Right handed, twisted
» Inclination of rifling	: constant 1:20
BREECH BLOCK	
» Type	: Wedge- horizontal
» Obturation	: Metal rings - Self sealing
» Firing mechanism	: Trip Action



SMALL ARMS AMMUNITION



Cartg. SA 5.56 mm Ball



Cartg. SA 7.62 mm Tracer



Cartg. SA 5.56 mm Tracer



Cartg. SA .303" Ball



Cartg. SA 7.62 mm Ball



Cartg. SA 7.62 mm Blank



Cartg. SA 9 mm Ball



Cartg. 14.5 mm Training



Cartg. SA 9 mm Ball

Description

Munitions India Ltd. offers a complete range of Small Arms Ammunition to be used in anti-personnel operations and are suitable to be fired from Standard small arms weapons used worldwide.

Products:

- » CARTG. SA 9 x 19 mm BALL
- » CARTG. SA 5.56 x 45 mm BALL/ TRACER INSAS
- » CARTG. SA 5.56 x 45 mm NATO BALL M855 (SS-109)/M 193
- » CARTG. SA 7.62 x 51 mm NATO BALL M80/TCR M 62
- » CARTG. SA 7.62 x 51 mm BALL & TCR LINK
- » CARTG. SA 7.62 x 51 mm MARKSMAN
- » CARTG. SA 7.62 x 39 mm BALL
- » CARTG. SA 12.7 x 108 mm API / APIT
- » CARTG. SA 14.5 mm ARTILLERY TRAINING
- » CARTG. 20 mm AMR TP/ TPT
- » CARTG. 20 mm AMR HEI / SAPHEI
- » NON LETHAL PLASTIC Ammunition
- » VARIOUS BLANK Ammunition

COMPANY : Munitions India Ltd.

CONTACT : exports@munitionsindia.co.in

7.62 MM MAG 2A1



Description

- » Gas operated, Air-cooled, Belt fed Machine Gun.
- » Weapon system for infantry role.
- » Suitable for Co-axial & Turret role.
- » Can be mounted and fired on Tripod, Tank and Aircraft.
- » Weapon is provided with a quick change Spare Barrel, to avoid over heating which causes cook off and reduction in barrel life. 7.62 mm MAG 2A1 is in-service since 1976.

Specification

» Calibre	:	7.62 mm
» Ammunition	:	7.62 x 51 mm ammunition
» Working Principle	:	Gas operated
» Muzzle Velocity	:	840 m/s
» Weight	:	11.0 Kg
» Length	:	1255 mm
» Effective Range	:	1800 m
» Rate of Fire	:	650-1000 Rounds per Minute
» Type of Fire	:	Burst Mode

COMPANY : Advanced Weapons and Equipment India Ltd.

CONTACT : marketing@aweil.in

NSN 1005720495679

7.62 X 39 MM TAR



Description

A modular, low weight, gas operated 7.62 mm Assault Rifle designed to give defence security personnel all the essential features to effectively fight the counter insurgency operations. 7.62 X 39 mm TAR is in-service since 2017.

Specification

» Calibre	:	7.62 mm
» Ammunition	:	7.62 x 39 mm Ammunition
» Overall Length of Rifle	:	900 mm
» Overall Length of Rifle (in folded condition)	:	650 mm
» Length of Barrel	:	415 mm
» No. of Grooves in Barrel	:	4
» Type of Feed	:	Curved Magazine with 30 RDS capacity
» Type of Fire	:	Single shot & Automatic Fire
» System of Operation	:	Gas
» Muzzle Velocity	:	710-715 m/s
» Weight of Rifle	:	3.5 Kg
» Range	:	350 meters
» Body Type	:	Milled Receiver Body
» Breech Bolt	:	Rotating Type
» Variants	:	i) Fixed Butt. ii) Side Foldable Butt.

COMPANY : Advanced Weapons and Equipment India Ltd.

CONTACT : marketing@aweil.in



120MM FSAPDS – KINETIC MUNITIONS



Description

BFL has been successfully developed and manufactured 120mm FSAPDS Mark II for MBT.

COMPANY : Bharat Forge Limited
CONTACT : contact.defence@bharatforge.com

AMMUNITION (ONLY EMPTIES)



Figure 1 : Artillery Shells of Various type (70 - 155 mm)



Figure 2 : 70mm Rocket Warhead, 120mm Mortar and 155mm Artillery Shell



Figure 3 : 500 Kg Bomb bodies

Description

Capability to produce Ammunition shells (only empties) of various types like Rocket warheads (70mm), Mortar (120mm), Artillery Shells (70 – 150mm) covering all variants including HE, smoke, illuminating and incendiary and 500Kg, 1000Kg Bomb bodies.

COMPANY : Bharat Forge Limited
CONTACT : contact.defence@bharatforge.com

ARMoured VEHICLE – RUNNING GEAR



Figure 4 : Road Wheels



Figure 5 : Tracks

Description

Capability to produce Aluminium Road Wheels and Road wheels. Group has developed & manufactured ready to fit track wraps for main battle tanks and is capable of designing & manufacturing running gear systems for any ICVs.

COMPANY : Bharat Forge Limited
CONTACT : contact.defence@bharatforge.com

ARMoured VEHICLE – POWERTRAIN COMPONENTS



Figure 9 : Turbocharger & Supercharger

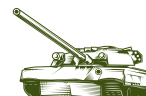


Figure 10 : Crankshaft

Description

High end proven capability for Heavy Forging, Heat Treatment and Machining make it feasible to supply engine aggregates like Crankshafts, Turbocharger, Super charger and Cylinder Liner for ICVs.

COMPANY : Bharat Forge Limited
CONTACT : contact.defence@bharatforge.com



TURNKEY SOLUTIONS FOR AEROSPACE & DEFENCE ELECTRONICS



Frequency Synthesizer Unit



Fuel Content System Test Set



Fuel Flow Meter-KPAR1



Intercom Test Jig



PC Board Assembly Cord No.4



RMI Test Rig



Synthesizer Electronic Frequency Unit



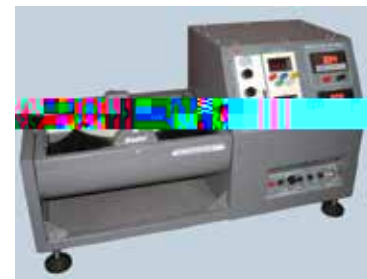
Universal Inverter Test Rig



TAWS Warning Panel



TAWS Relay Box



Vertical Gyro Test Bench

Description

Radel is a CEMILAC certified wholly Indian aerospace & defense MSME providing electronics and avionics based complete LRUs for a variety of platforms of Air Force, Navy and Army. All airborne LRUs are certified airworthy by CEMILAC.

COMPANY : Radel Advanced Technology Pvt. Ltd.
CONTACT : atg@radel.co.in

Specifications

- » Distributor of Matra Pod – Fires 18 rockets
- » Auto Selector – Fires 4 ERUs for Bomb release
- » LED ACL suitable for all aircraft & helicopters
- » Power Supply modules up to 200W
- » Digital and Analog circuits for RF applications
- » Light weight, high efficiency and reliable
- » Can provide obsolescence mitigation solutions

MECHANICAL AND TIME MECHANICAL FUZES (EMPTY) & SAFE AND ARMING DEVICES (EMPTY)



Various types of Mechanical and Time Mechanical Fuzes:

- » Fuze MG-25 (23mm)
- » Fuze A670 (30mm)
- » Fuze MGL (40mm)
- » Fuze DA5A (51mm)
- » Fuze 162 M8 (81mm)
- » Fuze 162 M9 (120mm)
- » Fuze 213 M3 (81mm)
- » Fuze 213 M4 (120mm)
- » Fuze 447 (84mm)
- » Fuze 117 (105mm)
- » Naval Fuze B25
- » Naval Fuze YDB60 for Rocket RGB60

Various types of Safe and Arming Devices (Empty):

- » Used in Fuze FB40 (40mm PFFC Ammunition)
- » Electronic Fuzes for 105mm, 130mm and 155mm calibre

COMPANY : Sandeep Metalcraft Pvt. Ltd.
CONTACT : info@sandeepmetalcraft.com



ARMOUR PRODUCTS

BULLET PROOF PATKA



Description:

BP Patkas developed are as per BP(R&D) Specifications using special armour steel. Ergonomic features and trauma pad provided to absorb shocks.

Specifications:

- » BP Patka (Steel) without skull protection – 1.4 Kg+10%
- » BP Patka (Steel) with skull protection – 1.5 Kg+10%
- » Capability
 - Front Armour Protection: 7.62x39 mm HSC
 - Rear Protection: 9 x 19 mm Ball

COMPANY : Mishra Dhatu Nigam Limited
CONTACT : mktg@midhani-india.in

BULLET PROOF JACKET



Description:

Lightweight bullet resistant jacket. Latest technology of dispersing CNT on the Polyethylene sheets and using ceramics on strike face is used.

Specifications:

- » BIS Level 5: 7.1 Kgs (large size) – without 360o protection, BFS:25 mm
- » BIS Level 5: 9.0 Kgs (large size) – with 360o protection, BFS:25 MM
- » Capability – Protection against BIS Level 5 and can be increased to BIS Level 6, depending upon user requirements

COMPANY : Mishra Dhatu Nigam Limited
CONTACT : mktg@midhani-india.in

BULLET PROOF HELMET



Description:

MIDHANI's Bulletproof Helmet are being used by Military Police and Special force to provide protection against ballistic threats to reduce head injuries and fatalities.

Specifications:

- » Made of Aramid (Kevlar) Composite material
- » Light Weight, High Strength
- » High-energy absorption-to-weight ratio
- » Outstanding long-term stability
- » Multi-Layer Construction
- » Durable & Comfortable Suspension Straps
- » Compatible with Chem/Bio hazard masks
- » Offers the ideal Ballistic Helmets for Law Enforcement. Military and Private Security Contractors
- » Sizes: M, L
- » Weight: 1.2 Kgs & 3Kgs
- » Protection Level
- » Level IIIA NIJ, BFS: 13 mm max

COMPANY : Mishra Dhatu Nigam Limited
CONTACT : mktg@midhani-india.in



COMBAT VEHICLE



Ballistic Protection:

- Roof and Body protected against 7.62x39 mm MSC and 7.62x39 mm HSC ammunition
 - Floor protected against 2 x HE 36 Grenades.
 - All ports are covered with different sizes of BP glass and protected against 7.62x39mm MSC & 7.62x39 mm HSC.
- » Crew Carrying Capacity with Weapons: 07
- » Run flat Tyres System: 100 kms
- » Bullet Resistant Glass:
- Protection against 7.62x39 mm HSC ammunition
 - 5 Years of warranty against any visibility defect
- » Quick Mounting and Dismounting: Quick mounting and dismounting due to dedicated door for front, and rear positioned crew.
- » Revolving Turret: Mounting of Large Calibre Support Weapon in 360o revolving Turret.

Enhancement Features:

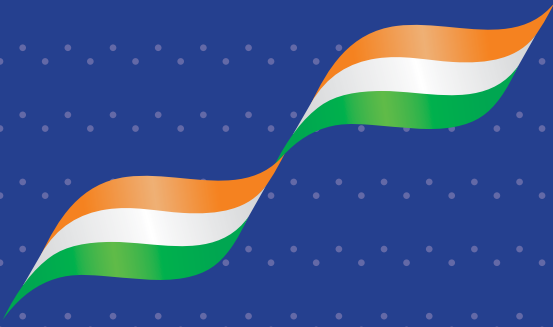
- » Composite Up-Armouring: Composite Armouring variant will provide power to weight ratio equal to 60 BHP/MT.
- » Surveillance and Reconnaissance: Can be Equipped with 360-degree high resolution camera with FOY varies from 35 degree to 75 degree or customised.

COMPANY : Mishra Dhatu Nigam Limited

CONTACT : mktg@midhani-india.in

NSN 1450720253088





NAVAL SYSTEMS

Description:

Specifications:

COMPANY : GOA SHIPYARD
CONSULT : goashipyard@goashipyard.com



OFFSHORE PATROL VESSEL (OPV)



Description:

The Offshore Patrol Vessel is equipped with sophisticated state of the art weapons and sensors viz Bofors anti-aircraft gun, Racal Decca 2459 search radar and BEL 1245 navigation radar. The 1890 tonnes vessel is the biggest NOPV developed at HSL. It has state of the art communication and navigation system.

Specifications:

- » Length : 101.00 m
- » Breadth : 11.50 m
- » Speed : 21 Knots speed achieved @ 85% MCR
- » Range : 7000 Nm
- » Power : 680 kw at 900 rpm

COMPANY : Hindustan Shipyard Limited
CONTACT : mprojectsdo@hslvizag.in
NSN 1940720473210

NAVAL OFFSHORE PATROL VESSEL



Description:

Naval Offshore Patrol Vessel (AOPV) is designed for patrolling and policing maritime zones, search and rescue, pollution control, external fire fighting and embarkation & operation of Advanced Light Helicopter for long range all time search and surveillance. The Vessel has a rail-less Helo-traversing system for Helicopter handling. This provides a clear deck for Helo-operations without the attendant rail fittings. A state-of-the-art navigation & communication equipment with Integrated Bridge System is provided on board. Modular Mast options are available for higher weapon fit. It is a multiple role capable, cost effective product, comparable to any other similar internationally available product. The basic platform is fuel efficient and cost effective and can be easily adapted to any special sea evolution requirements of the Customer.

Specifications:

- » Main Engine : 2 x Diesel Engines (2 x 8100 KW)
- » Speed : Not less than 25 Knots
- » Endurance : Not less than 6000 miles
- » Armament : 1 no 30mm Gun with FCS + 2 nos 12.7 mm Gun with FCS
- » Aviation : Operation & embarkation of 1no twin engine helo of AUW 6800 Kgs

COMPANY : Goa Shipyard Limited
CONTACT : fpg_office@goashipyard.com
NSN 1940 720 472 511

Description:

Specifications:

- » Length Overall : 50.44 m {Incl. WaterJet}
- » Breadth (mid.) : 7950 m
- » Displacement
- » Main Engine
- » Total Power : 3 x 2720 kw
- » Speed : 35 t 1 knots
- » Range : 1500 Nm at 12-14 knots
- » Endurance : 7 days

- » Length Overall : 15.56 m (including aft platform)
- » Speed : 30 knots
- » Range : 8 hours in the area of operation
- » Main Engine : 2 x Caterpillar C9 ACERT 503 BHP @ 2500 rpm
inboard diesel engines



FAST INTERCEPTOR BOATS



Description:

The Fast Interceptor Boat (FIB) is capable of performing high speed pursuits and interception in various border protection roles including anti-smuggling, anti-infiltration, fisheries, patrol and immigration and anti-terrorism activities. The vessel can also be used for search and rescue operations.

The boat hull is constructed making use of most advanced FRP construction technology. The FIB is capable of surviving at sea state 6 and capable of withstanding 4G acceleration and can withstand rough waters and choppy seas. Even at its top speed, it can be brought to a grinding halt within seconds. The boats are fully air-conditioned for crew comfort during prolonged patrolling duties.

Specifications:

- | | |
|---------------|--|
| » Speed | : 35 ± 1 Knots |
| » Range | : 150 Nm with 25% reserve |
| » Main Engine | : 2 x Cummins QSC8.3 500 BHP @2600 RPM Diesel Engine |
| » Propulsion | : 2 x Waterjet Kamewa FF310 |

COMPANY : Goa Shipyard Limited

CONTACT : fpg_office@goashipyard.com

NSN 1940 720 472 465



COMPANY : Hindustan Shipyard Limited
CONTACT : mprojectsdo@hslvizag.in
NSN 1940720473227

LANDING CRAFT UTILITY



Description:

Landing Craft Utility (LCU) are deployed to transport troops and equipment from ship to shore and vice versa. Following are the salient features of the LCU platform: -

- » Equipped with Bow Ramp for handling combat equipment and vehicles.
- » Arrangements for transporting and stowing equipment / vehicles on main deck.
- » Ballast tanks to achieve desired trim and for smooth beaching / un-beaching operation.
- » Arrangement to pull in / pull out stranded vehicles on beach using Tank hauling capstan installed on main deck.
- » Integrated Platform Management System (IPMS).

Specifications:

- » Length Overall : (m) 62.8 (approx.)
- » Breadth, moulded : (m) 11

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)

CONTACT : marketing@grse.co.in, grse.mktg@gmail.com

- » Depth up to Dk. No.1 : (m) 4
- » Draught (design) : (m) 1.70
- » Displacement : (t) 830 (approx.)
- » Speed : (knot) 15
- » Endurance : (Nm) 1500 at 12 Knots
- » Main Engines : (kw) 2 x 1850
- » Diesel Generators : (kw) 2 X 250, 1 X 350
- » Payload :
 - 01 No Main Battle Tank / 04 Nos. Armoured Personnel Carrier (Light Tanks) / 04 Nos. 4 Ton Trucks
- » Weapons :
 - 02 Nos. CRN-91 Guns
 - 04 Nos. Medium Machine Guns (MMGs)
 - 02 Nos. Heavy Machine Guns (HMGs)
- » Accommodation (Total : 216)
 - Officers 10
 - Sailors 46
 - Troops 160

VOITH TUG



Description:

Tug is designed and developed for towing and assisting naval ships, submarines and crafts in harbour and restricted water, conducting fire fighting operations, carrying out search and rescue operations and tow ships up to 45000 displacement in harbour, towing of two or more small ships (450 tonnes displacement).

Specifications:

- » LOA : 34.55 m
- » Bollard Pull : 50 ton bollard pull achieved @ 85% MCR
- » Speed : 12 knots
- » Endurance : 72 hrs with reserve capacity

COMPANY : Hindustan Shipyard Limited

CONTACT : mprojectsdo@hslvizag.in

NSN 1925720487327



LIGHT WEIGHT TORPEDO (TAL-XP)



Description:

LIGHT WEIGHT TORPEDO (TAL-XP) is a state of art underwater weapon which can be launched from a ship and/or a Helicopter.

COMPANY : Bharat Dynamics Limited
CONTACT : bdbdl@bdl-india.in
NSN 1356720474117

Specifications:

- » Length : 2752 mm
- » Weight : 197.5 Kg (exercise version) 220 Kg (war shot version)
- » Diameter : 324 mm
- » Displacement : 190.7 Kg
- » Explosive weight : 40 Kg

Tactical characteristics:

- » Role : Anti-submarine
- » Launch platform : Ship / helicopter / fixed wing aircraft
- » Speed : 33 knots(max)
- » Endurance : 6 min
- » Depth of operation : 10 mtrs(min) 450 mtrs(max)
- » Propulsion : Electrical

Description:

COMPANY : Bharat Dynamics Limited
CONTACT : bdbdl@bdl-india.in
NSN 1356720473826



CRN 91 NAVAL GUN



Description:

CRN 91 Gun is a modular, flexible and effective weapon intended for use against armoured targets and air targets flying at low altitudes. The range is 2 km for AP and 4 km for HE projectiles. The cannon can hit slow moving objects in air at a height of 2000 m and has a total range of 2500 m. CRN 91 Naval Gun is in-service since 1995.

COMPANY : Armoured Vehicles Nigam Ltd.

CONTACT : export@avnvl.co.in, marketing@avnvl.co.in

NSN 1005720487371

Specifications:

- » Diameter : 2700 mm
- » Height : 2100 mm
- » Designation : 2A42
- » Caliber : 30 mm
- » Rate of Fire : Slow : 200 to 300 rounds per min,
Rapid : 550 rounds per min
- » Binocular Type : BPK 2-42

TORPEDO LAUNCHERS



Description:

L&T has designed both lightweight and heavyweight torpedo launchers for Anti-Submarine warfare operations. The Light Weight Torpedo launchers (LWT) have triple tube configuration and are installed on P16A class ships of the Indian Navy. The Heavy Weight Torpedo launchers (HWT) have twin-tube configuration and are installed on P15A and P28 class ships. The system is designed with a Power PC-based controller.

Specifications:

- » TTL system : Firing is achieved by injecting high pressure air at high mass flow rate into the tube
- » ITTL : The system is designed for single shot and salvo firing of torpedoes from a remote station through the IAC Mod C Fire Control System

COMPANY : Larsen & Toubro Limited
CONTACT : intl.defence@larsentoubro.com
NSN 1045720487328

KAVACH MOD-II CHAFF ROCKET LAUNCHER



Description:

The KAVACH MOD-II system is designed to counter the threat of various anti-ship missiles by using chaff decoys. The system provides soft kill defence in a three-layered defence scheme. Multi barrel chaff rocket launcher is available both in Long Range and Short Range. Kavach MOD-II Chaff Rocket Launcher is in-service since 2010.

Specifications of LRMR launcher:

- » Overall weight : 1680 Kgs
- » Overall Height : 2690 mm
- » Overall Width : 1300 mm(dia)
- » Overall Length : 1300 mm(dia)
- » Mode of operation : Power and Manual
- » Bore of barrel : 105.6 + 0.4 mm

COMPANY : Armoured Vehicles Nigam Ltd.
CONTACT : export@avn1.co.in, marketing@avn1.co.in
NSN 1055720487366



ASW ROCKET LAUNCHER



Description:

This ship-based anti-submarine weapon system is capable of firing 212 mm depth charge rockets at submerged targets, in single and salvo mode, from remote as well as local control stations. The launcher has a stabilised naval launch platform with two 2-axis all-electric servo drives. It has been developed for 15A and P28 class ships.

COMPANY : Larsen & Toubro Limited
CONTACT : intl.defence@larsentoubro.com
NSN 1055720487387

Specifications:

- » Capable of firing 12 radially arranged depth charge rockets
- » Supported by Rocket Feed Complex

This weapon system designed for beach-clearing by LST class of



53,000 DWT BULKER



Description:

Designed and developed for Carriage of 53,000 Dwt bulk cargo materials, vessel is accommodated with 5 cargo holds and equipped with heavy cranes for loading and unloading cargo. Constructed and equipped to carry dry bulk, break bulk, grain, metal concentrates, iron ore, scrap metal, coal, bauxite, salt and sugar, general cargo such as steel products, forest products, package freight and palletized cargo, besides long cargo like pipes and bagged cement and bagged cargos etc.

Specifications:

» LOA	:	190.00 m
» Displacement	:	65084 tonnes
» Speed	:	14 Knots speed achieved @ 85% mcr
» Power	:	9480 kw

COMPANY : Hindustan Shipyard Limited
CONTACT : mprojectsdo@hslvizag.in
NSN 1915720473237

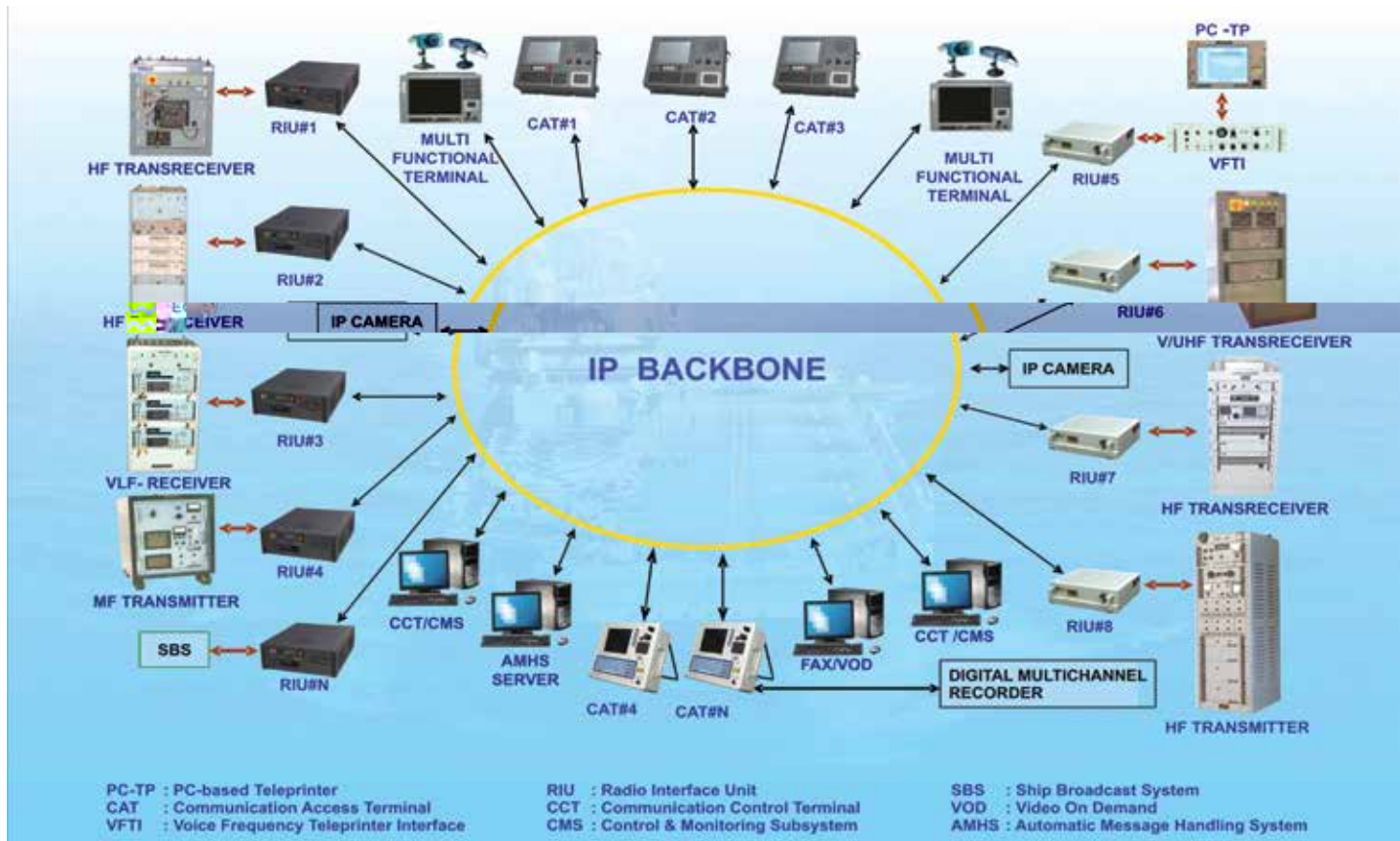
FLOATING DOCK

Description:

COMPANY : Larsen & Toubro Limited



ADVANCED COMPOSITE COMMUNICATION SYSTEM (CCS MK IV)



Description:

The Advanced Composite Communication System (ACCS) is an IP based, highly flexible Integrated Communication System designed to provide quick and reliable communication over VLF/MF/HF and V/UHF bands on board Naval Ships and Submarines for facilitating ship-to-ship, ship-to-shore and Ship-to-Air communication.

It provides the end user, central control for allocation & control of Radios, monitoring of status and power, other supervisory features. It facilitates remote operations of radio, intercom and radio group working.

COMPANY : Bharat Electronics Limited

CONTACT : imd@bel.co.in

NSN 5895720487321

Specifications:

- » LOA : 190.00 m
- » Displacement : 65084 tonnes
- » Speed : 14 Knots speed achieved @ 85% mcr
- » Power : 9480 kw

Description:

COMPANY : Bharat Electronics Ltd
NSN : 5840720487276



COMBAT MANAGEMENT SYSTEM (CMS)



Description:

CMS automates tactical data handling from the ship's sensors and provides a Decision support system to the command. It gathers data from ships / helicopters / aircraft in the fleet through data link to collate, process, integrate and present a comprehensive tactical picture of the area of operation and also acquires, stores, processes, integrates, correlates & displays tactical data (both raw & processed) from various sensors in real time. It does continuous identification and classification of air, surface & sub-surface targets, carries out threat assessment and automatically advises the command on course of action when activated by events occurring in the equipments that are integrated.

COMPANY : Bharat Electronics Limited

CONTACT : imd@bel.co.in

NSN 1230720487277

Other manufacturer:

COMPANY : Tata Advanced Systems Limited

CONTACT : tata-and@tataadvancedsystems.com

Specifications:

- » Designates sub-surface, surface and air targets to the fire control system
- » Monitors the execution of weapon firing and display the status of weapons communication etc. after firing
- » Efficient recording of events, operator commands & data to enable reconstruction of scenario at later time
- » Facility for off-line map preparation and loading of charts
- » Adequate redundancy provided by fault tolerant software
- » Capable of simulating environment comprising of all sensors to present real situation scenario for training of the operator
- » Easy to use diagnostics for off-line health monitoring, maintenance of system and verification of hardware health
- » Flexible architecture to facilitate addition / detection of system components on different types of platforms

ELECTRO OPTICAL FIRE CONTROL SYSTEM -UPGRADE 2 (EOFCS-U2)



Description:

The EOFCS is a compact, 2 axes stabilized, high performance system for control of short and medium range naval gun mounts. It has capability of panoramic detection, identification and gun engagement of all types of surface and air targets, such as anti-ship sea-skimming missiles, high speed missile boats and Fast Incoming Attack Craft (FIAC) and provides efficient and comprehensive control of short and medium range guns in anti-air, surface and Naval Gunfire Support (NGS) engagements.

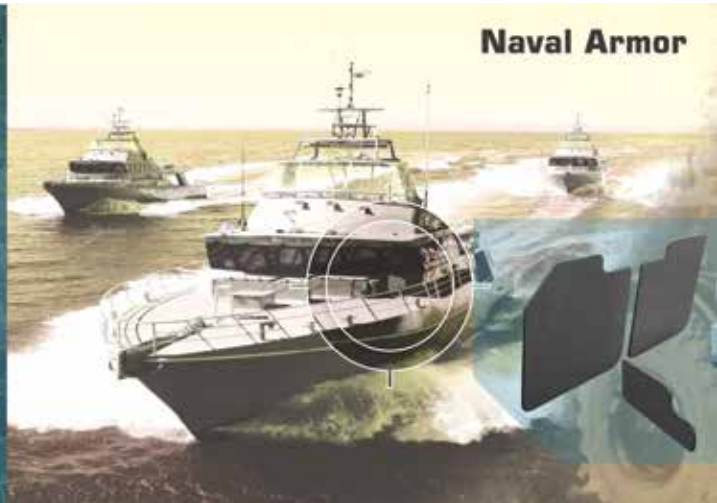
Specifications:

- | | |
|--------------------------|---|
| » Azimuth Limits | : Panoramic |
| » Elevation Limits | : -30° to +85° |
| » TV Camera | : Continuous Zoom from 16(H) x 12(V) to 1.7(H) x 1.3(V) |
| » Thermal Imager | : Continuous 36 x Optical Zoom |
| » Laser Range Finder | : Eye safe type with beam wavelength of 1.54 μ m, Beam width - 0.7°, SRBIUM glass |
| » Operating Temperature | : -10°C to +50°C |
| » EMI/EMC | : As per MIL STD 461E |
| » 2 axes Gyro Stabilized | |

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 1260720487322



FLOATATION BALLISTIC JACKETS



Description:

SMPP produces tactical flotation body armor which is specially designed for maritime security personnel.

- » Inflates automatically when in contact with water in auto mode.
- » Provides perfect balance of positive flotation.
- » It has been tested to provide flotation, even in unconscious state, for more than 96 hours.
- » Ballistic protection in any maritime environment.
- » In-use in Indian Navy and Coast Guard in addition to forces worldwide.
- » Tested and certified by world's renowned testing laboratories.

Specifications:

Platform protection for Naval Vessels

- » SMPP produces a wide range of customized light weight armor solutions for various naval forces.
- » Provides protection to the vulnerable areas of the vessel.
- » Protection from extensive range of threats including fragments, rifle fire, armor piercing rounds etc.
- » Light weight systems allow uncompromised speed and operation.
- » In-use in various patrol boats, frigates, etc.

COMPANY : SMPP Private Limited
CONTACT : contact@smgroupindia.com
NSN 8470720487473

90 M OFFSHORE PATROL VESSEL

Description:

USN 194072051205@quashiyard.com
USN 194072051205@quashiyard.com

ANTI-SUBMARINE WARFARE CORVETTE



Description:

Anti-Submarine Warfare Corvette (ASWC) is a frontline warship with Stealth features. The Composite Material Superstructure reduces Weight, Magnetic signature and RCS (Radar Cross section).

Hull, equipment & equipment foundation is designed for low Acoustic signature. Advanced heat signature management techniques such as IRSS device has been installed for Infrared signature suppression thus enhancing stealth capability of the platform. Ship is also capable to operate in NBC Environment (Nuclear, Biological & Chemical).

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)
CONTACT : marketing@grse.co.in
NSN 5865720487372

Specifications:

- » Length Overall : (m) 109.10
- » Breadth : (m) 14.17
- » Depth : (m) 8.5
- » Displacement : (t) 3200 approx.
- » Max Speed : (knots) 25.00
- » Draught (Design): (M) 3.72
- » Endurance: (Nm) 3450 approx. at 18 knots
- » Main Engines : (kw) 4 X 3888 at 1050 rpm
- » Diesel Generators : (kw) 2 X 1000, 2 X 500
- » Aircraft : Seaking Mk-42B/ Advanced Light Helicopter

- » Armament
 - Electronic Warfare System : Hull Mounted Sonar
 - SRGM : CIWS
 - Torpedo Launcher : Integrated Rocket Launcher
 - Chaff Launcher : Early Warning Radar
 - Fire Control Radars : Under Water Sensors
- » Accommodation
 - Officers : 17
 - Sailors : 106

40 KNOTS HIGH SPEED FRP INTERCEPTOR CRAFT

The boats shall be day/night surveillance and investigation

COMPANY : Goa Shipyard Limited

MISSILE CORVETTE



Description:

Missile Corvette is a frontline warship armed with SRGM Gun, Surface-to-Surface and Surface-to-Air Missiles and Anti-aircraft Guns. It is also equipped with Electronic Warfare System and CIWS. It has a Helo Landing Deck.

Specifications:

» Length Overall	(M)	91.10
» Breadth	(M)	10.50
» Displacement	(T)	1370
» Max Speed	(Knots)	25.00

» Draught	(M)	3.00
» Endurance	(NM)	4000 at 16 knots
» Main Engines	(BHP)	2 X 7100
» Diesel Generators	(KW)	4 X 350

Armament

» Electronic Warfare System	SRGM Gun
» SSM (Surface to Surface Missile)	SAM (Surface to Air Missile)
» CIWS	

Accommodation

» Officers	09
» Sailors	70
» Total	79

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)

CONTACT : marketing@grse.co.in, grse.mktg@gmail.com

NSN 1905720487372

Description:

Specifications:

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)
CONTACT : marketing@grse.co.in, grse.mktg@gmail.com

OFFSHORE PATROL VESSEL



Description:

The ship is capable of carrying out multi mission roles, including Anti-Piracy Operations, Search & Rescue Operation, Anti-Smuggling Surveillance, Protection of EEZ etc. The Offshore Patrol Vessel is also deployed for Fisheries Protection, Logistic Support Operation including Transportation of Dry Cargo, Fuel Oil & Fresh Water and refrigerated fresh food, Transportation of Small Detachment of Troops/Personnel, Helicopter Operations, Pollution Control Operation, External firefighting.

Specifications:

» Length Overall	(M)	74.10 (approx.)
» Length B.P.	(M)	69
» Breadth, moulded	(M)	11.40

» Depth	(M)	7.90
» Draught (Full load)	(M)	3.50 (approx.)
» Displacement	(T)	1350 (approx.)
» Speed	(Knot)	20
» Endurance	(NM)	> 5000 at 12 – 13 Knots
» Main Engines	(KW)	2 x 4300 at 1050 rpm
» Diesel Generators	(KW)	4 x 250, 1 x 80
» Weapons		CRN-91 Gun Medium Machine Guns (MMGs) Heavy Machine Guns (HMGs)
» Accommodation		Officers 14 Sailors 48 Passengers 31 Total 93

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)

CONTACT : marketing@grse.co.in, grse.mktg@gmail.com

NSN 1940720512242

WATER JET FAST ATTACK CRAFT



Description:

Water Jet Fast Attack Craft (WJFAC) is small yet versatile naval platform with agility and speed for meeting multi mission objectives. These WJFACs are ideally suited for intercepting fast moving surface crafts and performs anti-smuggling, fishery protection, and search & rescue operations. The ship is fitted with Hamilton Water Jets which is the most advanced and innovative marine Propulsion System in use today.

Specifications:

» Length Overall	(M)	48.9
» Breadth	(M)	7.5
» Depth	(M)	4
» Draught	(M)	2.2

» Displacement	(T)	315
» Max Speed	(Knots)	35
» Endurance	(NM)	2000 (Approx.) at 12-14 Knots
» Main Engines	(KW)	3 x 2720
» Diesel Generators	(KW)	3 x 80
» Weapons		CRN-91 Gun Medium Machine Guns (MMGs) Heavy Machine Guns (HMGs) Portable Surface to Air Missile Launcher
» Accommodation		Officers 4 Sailors 25 Total 29

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)

CONTACT : marketing@grse.co.in, grse.mktg@gmail.com

**Description:**

GRSE built Fast Interceptor Boats are well utilised as Day/Night

Specifications:

Categories

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)
CONTACT : marketing@grse.co.in, grse.mktg@gmail.com

STEALTH GUIDED MISSILE DESTROYER



Description:

State of the art frontline warship equipped with potent blue water capabilities, surface warfare, anti-submarine warfare and anti-air warfare. It incorporates modern weapons and sensors having advanced information warfare suite, an integrated platform management system, an auxiliary control system with sophisticated power distribution architecture and modular crew quarters. A large flight deck and an enclosed hangar for two helicopters further extend its reach.

Specifications:

- | | | |
|--|---|---|
| <ul style="list-style-type: none">» Length Overall : 163.95m» Breadth : 17.7m | <ul style="list-style-type: none">» Displacement : 7500t» Speed : 30 knots» Propulsion : COGAG» Armament<ul style="list-style-type: none">• Surface to Surface missiles• Surface to Air missiles• Torpedo tube launchers• Rocket Launcher• CIWS• Chaff Launcher• MR Gun• LIMO Weapons | <ul style="list-style-type: none">» Sensors<ul style="list-style-type: none">• Bow Mounted Sonar• Surveillance Radar• Early Warning Radar• Surface Surveillance Radar• Navigational Radar• EW Suite» COMBAT MANAGEMENT SYSTEM |
|--|---|---|

COMPANY : Mazagon Dock Shipbuilders Limited (MDL)

CONTACT : mdlmktg@mazdock.com



Description:

»

COMPANY : Mazagon Dock Shipbuilders Limited (MDL)

CONTACT : Garden Reach Shipbuilders & Engineers Limited (GRSE)
marketing@grse.co.in, grse.mktg@gmail.com

CORVETTES



Description:

State of the art warship designed for good manoeuvrability, speed and striking ability with the capacity of helicopter operations. The weapon suite comprises of SSM, SAM, ASW and CIWS. Equipped with CODAD propulsion system with maximum speed of 25 knots.

Specifications:

» Length Overall	:	91.16 m
» Breadth	:	10.45m
» Displacement	:	1500t
» Speed	:	27 knots
» Propulsion	:	CODAD

- » Armament
 - Surface to Surface missiles
 - Surface to Air missiles
 - Torpedo tube launchers
 - Rocket Launcher
 - CIWS
 - Chaff Launcher
 - MR Gun
 - LIMO Weapons
- » Sensors
 - Hull Mounted Sonar
 - Surveillance Radar

- Early Warning Radar
 - Surface Surveillance Radar
 - Navigational Radar
 - ESM Suite
 - » Combat Management System
- Note: Variants available of lengths 91m, 119m, 109m and 103m and speeds varying from 25-28 knots.

COMPANY : Mazagon Dock Shipbuilders Limited (MDL)
CONTACT : mdlmktg@mazdock.com

SUBMARINE



Description:

- » Capable of offensive operations across entire spectrum of naval warfare including anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying and area surveillance.
- » SSKs are the latest platform management systems for power and machinery and state-of-the-art weapon, communication and navigation.

COMPANY : Mazagon Dock Shipbuilders Limited (MDL)
CONTACT : mdlmktg@mazdock.com

Specifications:

- » Length Overall : (m) 61.7
- » Breadth : (m) 6.2
- » Displacement : (t) 1565
- » Speed : 20 knots
- » Steel : High tensile Strength Steel
- » Propulsion : Diesel Electric
- » Endurance : 6000 Nm at 8 knots
- » Armament
 - Weapon launching tube
 - Torpedo Launching tube
 - Surface Underwater Target
 - Anti-torpedo counter measure system
- » Sensors
 - Hull Mounted Sonar

HOVERCRAFT



Description:

Hovercraft also known as air-cushion vehicle (ACV), is an amphibious craft capable of travelling over land, water, mud other surfaces. Following are the salient features of Hovercraft

- » Designed by M/S Griffon hovercraft Ltd (UK) and jointly built by GRSE kolkata.
- » Hull is made of light weight marine grade aluminum alloy.
- » Powered by two 588 KW radiator cooled MTU Diesel Engines.
- » Provision for Armament fitment.
- » Craft can be used for Patrolling and search & rescue operations. Same can be modified to suit other requirements.

COMPANY : Garden Reach Shipbuilders & Engineers Limited (GRSE)

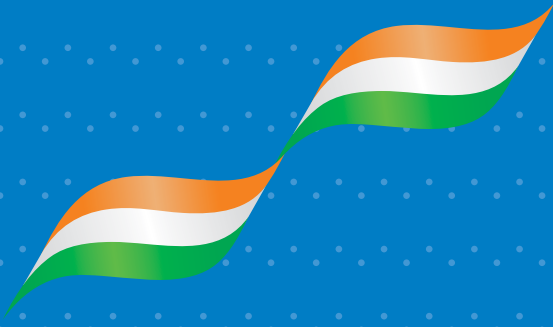
CONTACT : marketing@grse.co.in, grse.mktg@gmail.com

Specifications:

» Length Overall	(M)	21.15
» Beam Overall	(M)	11.00
» Air Draft	(M)	06.66
» Obstacle Height clearance Height	(M)	01.25 (draft 0.32 M when not hovering)
» Speed Max	(Knot)	45.00
» Payload of Craft	(Kg)	4000.00
» Engine (Propulsion & lift Integrated)		Two MTU 12V 183 TB 32
» Endurance		270 Nautical Miles (nm)
» Accommodation:		Officer's - 02 Other rank - 11







AIR SYSTEMS



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C : H



Description:

HAL Do-228



Description:

The 19 seater Do-228 aircraft is a highly versatile multi-purpose light transport aircraft. It has been developed specifically to meet the manifold requirements of utility and commuter transport, third level services and air-taxi operations, coast guard duties and maritime surveillance. Do-228 can be deployed for various roles like:

- » Maritime Surveillance
- » Pollution Prevention
- » Troop Transport
- » Aerial Survey
- » Search and Rescue
- » Commuter Transport
- » Calibration of airport NAV-COM Aids
- » Transport Flying Training

- » Remote Sensing Applications
- » Casualty Evacuation
- » Executive Transport
- » Cargo & Logistics Support

Specifications:

- | | |
|--|---------------------------|
| » Wing span | : 16.97 m |
| » Overall length | : 16.56 m |
| » Overall height | : 4.86 m |
| » Pax seats | : 19 |
| » Engine Model | : Garrett TPE 331- 5 / 10 |
| » Max. Take off Weight(Maritime role) | : 6400 Kg |
| » Max cruise speed | : 428 km/hr |
| » Max range speed | : 333 km/hr |
| » Rate of climb | : 9.7 m/s |
| » Max. Take off Weight(Commuter role) | : 6200 Kg |

COMPANY : Hindustan Aeronautics Limited

CONTACT : marketing@hal-india.co.in

NSN 1510 720 471 790



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LIGHT UTILITY HELICOPTER (LUH)



Description:

Light Utility Helicopter (LUH) is a new generation utility helicopter in the three ton weight class designed to meet the requirements of both military and civil operators, powered by a single turbo shaft engine with adequate power margins to accomplish high altitude missions with ease and suitable for operations in diverse operating conditions.

Specifications:

- » MTOW : 3150 Kg
- » Max. speed : 235 kmph
- » Range : 350 km
- » Service Ceiling : 6.5 km
- » Oblique climb rate : 7.5 m/s

Major Features

- » Composite Airframe with crash worthy features
- » Main & Tail Rotor blades made out of composite materials for damage tolerance capability
- » The hinge less Rotor system ensures high agility and maneuverability of the helicopter
- » State of the art Avionics suite with smart MFDs
- » Capacity of transporting up to 6 troops or 2 stretchers with a medical attendant or large volume internal cargo

COMPANY : Hindustan Aeronautics Limited
CONTACT : marketing@hal-india.co.in



DRONE BASED PRODUCTS /SOLUTIONS



	Bharat Electronics Limited	

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C



BAIT AND RODS WATER

Description:

- » Provides self-protection to heat seeking missile launched from Air or Ground.
- » Dispenses Aircraft/ Helicopters Decoy



REMOTELY PILOTED AIRCRAFT (RPAS) / UNMANNED AERIAL VEHICLES (UAVS)



ALTIOUS



Rakshak VTOL



SKY-I

Description:

Indigenously designed and developed range of fully autonomous man-portable, field deployable small UAVs, which can deliver an unprecedented situational awareness to combat soldiers. Day and night surveillance, target tracking and relay functionality are some of the features also available. With a strong focus on customised solutions, the indigenously designed auto pilot and mission control software allow customer-specific payload integration and customised user interfaces.

Specifications:

- » **Altius Tactical RPA System** (Endurance: 4-6 hours; Payload: upto 3Kg)

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

- Altius is a light-weight, medium altitude, medium range, fully autonomous, engine-powered tactical UAV. The Altius System offers real-time ISTAR capabilities at brigade level through integration of a variety of payloads.
- » **Rakshak VTOL RPA System** (Endurance: 2+ hours; Payload: upto 3Kg)
 - Rakshak Vertical Take Off and Landing (VTOL) is capable of taking off and landing vertically from space constrained locations in hills and forests. The vertical take-off is followed by autonomous conversion to fixed wing mode and vice versa for landing.
- » **Sky-I RPA System** (Endurance: 2+ hours; Payload: upto 1Kg)
 - Sky-I is a fully automated UAV with a service ceiling of 6000m AMSL, carrying a high definition day or night sensor payload with a range of 15km.



ZEN ANTI-DRONE SYSTEM

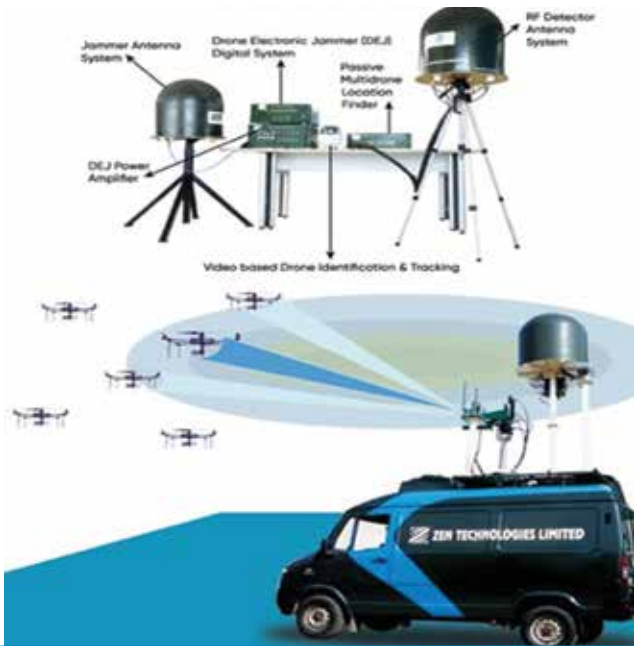
Description:

Zen Anti-Drone System (ADS) is a Multi-Layer Multi Sensor Architecture aimed at providing comprehensive security against drone attacks. Anti Drone System from Zen Technologies works on drone detection, Classification and tracking on passive surveillance, camera sensors and neutralization of the threat through jamming the Drone communication and GPS Signals.

Specifications:

Description	Value
Frequency Covered	All ISM, Navigation as well as Full coverage from 400MHz to 6GHz
Detection range	Up to 5 Km (Can be extended upto 10kms)
Angle coverage	Azimuth - 360 degrees, Elevation - 70 degrees
Types of signals	RF signal emissions of types used by remote controls and telemetry (video) signals. Even non-standard waveforms such as military SDRs falling in the frequency range are detectable.
Camera type	Day and Night camera
Camera Range	Up to 3 km (Can be Extended upto 5km)
Camera Resolution	2MP , 1080p
Continuous Zoom Optics	Up to 800mm
Pan	0 to 360°
Tilt	-15° to 70°
Jamming Architecture	Software based selection among 1. Directional antenna with servo control 2. Omni antenna for 360 degree jamming
Jammer range	Up to 3 Km (Can be extended upto 10kms)
Jamming communication Frequency bands	All ISM, Navigation bands * wide band system can be provided covering all frequency bands.
Jamming supported Navigational frequency bands	GPS, GLONASS, GALILEO, BEDOIU
Temperature	Operational temperature: -10 to +45, Storage temperature: -20 to +55

COMPANY : Zen Technologies Limited
CONTACT : info@zentechnologies.com



ASTERIA A200- AGRI



Description:

A micro-UAV equipped with advanced automation and quick deployment, which is ideal for modernized farming and precision agriculture measurements for crop yield estimation, crop counting and crop damage assessment.

Specifications:

- » 24.1 MP Still Image Camera
- » Mechanically & electronically stabilized hot swappable payloads
- » 5 band Multispectral camera
- » GSD: 8 cm per pixel (per band) at 120 m
- » Tool-less assembly & Disassembly
- » Autonomous operation from takeoff to landing
- » Digital, encrypted communication link
- » Failsafe for low battery, communication loss
- » Automated Motion Detection & Target Tracking

COMPANY : Asteria Aerospace Private Limited
CONTACT : sales@asteria.co.in

ASTERIA A410-XT



Description:

A vertical takeoff and landing small UAS with high endurance for quick deployment from confined locations. Capable of operating in high altitude and extreme temperatures with an operational ceiling of 6500m. Appropriate for defence & homeland security, industrial inspection, police & paramilitary.

Specifications:

- » Mechanically & electronically stabilized hot swappable payloads
- » Tool-less assembly & disassembly
- » Failsafe for low battery, communication loss
- » Digital, encrypted communication link
- » Automated Motion Detection & Target Tracking
- » Autonomous operation from takeoff to landing

COMPANY : Asteria Aerospace Private Limited
CONTACT : sales@asteria.co.in



Description:

A Fixed Wing V

Specifications:

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COMPANY : Asteria Aerospace Private Limited



Description:

Take Off and Landing for Quick Deployment

Specification:

COMPANY : Asteria Aerospace Private Limited

ASTRA



Description:

ASTRA is an indigenously developed Beyond Visual Range Air - to - Air missile comprising of Astra Missile and Launcher.

Specifications:

- » Range : 80 -110 km
- » Altitude : up to 20 km
- » Length : 3840 mm
- » Diameter : 178 mm
- » Flight Duration : 100 – 120 Sec
- » Warhead : HE Pre Fragmented
- » Max Speed : Mach 4.5
- » Propulsion : Solid Rocket Motor
- » Detonation Mechanise : Radar proximity Fuse.
- » Guidance : Inertial, mid-course update and terminal active radar homing (13 km)
- » Launch platform : Su-30 MKI

COMPANY : Bharat Dynamics Limited
CONTACT : bdbdl@bdl-india.in

SMART ANTI - AIR FIELD WEAPON (SAAW)



Description:

Smart Anti - Air Field Weapon (SAAW) is long range, standoff, precision air-to-surface weapon.

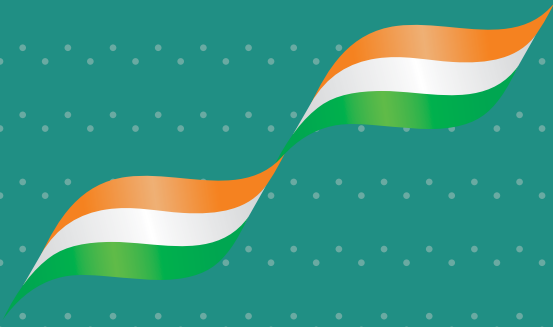
Specifications:

- » Capable of engaging ground targets when launched from fighter Aircraft
- » Mass : 125 Kg and
- » Length : 1.85 m
- » Accuracy : < 7m with (IN-GPS) & < 3m with Seeker
- » Range : upto 90 - 100 km based on release conditions.

COMPANY : Bharat Dynamics Limited
CONTACT : bdbdl@bdl-india.in







COMMUNICATION SYSTEMS



Description:

LVP 341 is a VHF handheld radio with in-



Description:

LUP 291 is a UHF handheld radio with in-built high grade digital secrecy is compact, lightweight, user friendly with minimum number of controls and interface is provided for Headgear and Crypto key loading. The radio set is provided with helical and magnetic mount antennas.



Specifications:

Specifications:

- » Frequency Range : 136 to 174 MHz
- » Channel spacing : 12.5 KHz /25 KHz
- » Type of operation : FM, Simplex
- » Battery

LiSO2 battery pack

- » Operating temperature range : - 30° C to + 55° C
- » EMI / EMC

MIL-461 C

- » Weight : mm (D) x 130 mm (H)
- » standard 1.5 Ah Li-Ion)
- » Frequency range
- » Channel spacing
- » Type of operation
- » Battery : 7.2V Primary and Secondary batteries
- » Operating temperature range : - 30° C to + 55° C
- » EMI / EMC : Complies with MIL- 461 C
- » 32 Preset crypto keys +1 manual key

- » Dimension : 171 mm x 80 mm x
- » Weight : <450 gm (with
- » Frequency Band : UHF (325 to : FM, Simplex

VHF FF Transceiver is a new generation of Fixed Frequency radio



VEHICLE BASED SATCOM FOR DISASTER MANAGEMENT (MODEL)



Description:

The Portable HSPA Mobile BTS is required to establish mobile communications, in remote locations, where the overall WCDMA network does not provide local coverage.

Specifications:

- » All terrain four wheel drive vehicle.
- » Mobile 3G-WCDMA BTS, Providing local coverage.
- » Km coverage with 18 M Electro Mechanical Mast.
- » Supports upto 25 simultaneous HSPA Users.

COMPANY : Alpha Design Technologies Pvt. Ltd.
CONTACT : alphacorp@adtl.co.in
NSN 5895720487379

CB/LB FIELD TELEPHONE PTR1000+



Description:

PTR1000+ is a lightweight, ruggedized and portable 2-wire analogue field telephone for voice communication. It can be used on the table, hung on a tree or on a wall, carried in a bag or with the carrying strap.

Specifications:

- » DTMF or pulse signaling
- » Standard H-250, Push-To-Talk, Noise Cancelling Handset.
- » Adjustable levels for acoustical signal, including silent

COMPANY : Alpha Design Technologies Pvt. Ltd.
CONTACT : alphacorp@adtl.co.in
NSN 5805720487323





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COMPANY : Alpha Design Technologies Pvt. Ltd.
CONTACT : alphacorp@adtl.co.in
NSN 1240720487325



COMPANY : Alpha Design Technologies Pvt. Ltd.
CONTACT : alphacorp@adtl.co.in
NSN 5865720487369

VHF BASE STATION LVM 342



Description:

The Secure VHF Base station radio LVM 342 is lightweight and portable and is useful for ground communication at the platoon level. The radio provides for Clear and Secure voice communication. The radio is micro controller based and has a user friendly MMI (Man Machine Interface). It enables selective call operation between two radios or in a net of many radios.

Specifications:

- » Weight : 3.8 Kg
- » Dimension : 241 mm (W) X 220 (D) mm X 65 (H) mm
- » Frequency Range : 136 MHz to 174 MHz
- » Channel spacing : 25 KHz
- » No. of channels : 1520

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 5820720487343

V/UHF AM/FM TRANSCEIVER LUP 329



Description:

V/UHF AM/FM Transceiver meets the required long range ground to ground, and ground to air communication needs with protection against Electronic Counter Measures (ECM). The radio is provided with high-grade crypto, frequency hopping, voice/data. The communication in ECCM mode is instantaneous as Time Of the Day (TOD) is maintained using highly stable clock.

Specifications:

- » Dimension : 250 W x 100 H x 247D (mm) (without battery)
- » Weight : <6 Kg (without battery pack)
- » Frequency range : 108-155.975 MHz and 225-399.975 MHz
- » Channels : Up to 8920 channels at 25 KHz spacing
- » Power Supply : 24 V DC (nominal)
- » Operating temperature : -20° C to + 55° C
- » EMC / EMI : MIL-STD-461C

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 5820720487331

SOFTWARE DEFINED RADIO MANPACK (SDR)



Description:

SDR is a new generation compact V/UHF band radio designed to provide fast, reliable and secure LOS voice, data and video communication. It has high data rate of upto 1Mbps. It is power efficient, light weight and suitable for manpack application.

Specifications:

- » Dimension : 260 mm x 195 mm x 64 mm (with battery)
- » Weight : <3.5 Kg (with battery)
- » Frequency Band : V/UHF (30 to 512 MHz)
- » Data Rate : 64 Kbps/512 Kbps/ 1Mbps
- » Software : Re configurable and Upgradable
- » Security : Built-in high grade security and ECCM capability
- » Power Supply : Rechargeable battery: 14.8 V DC, Li-Ion (8.7Ah)
- » EMI/EMC : JSS 55555 & MIL-STD-461F complaint
- » Operating temperature : - 30°C to + 55°C

COMPANY : Bharat Electronics Limited
CONTACT : imd@bel.co.in
NSN 5895720487412



h IP-based Command & Control Unit which controls integration of

MOBILE EMERGENCY COMMUNICATION SYSTEM (MECS)



Description:

Mobile Emergency Communication System (MECS) is a Robust / Rugged Unified Communication System on a Tata GS800 4x4 platform, which can be quickly deployed to provide connectivity to support Fire Fighters, Disaster Response Teams, Rescue & Relief Operations, Special Forces etc.

MECS is designed to enable cross-communication of messages between a variety of communication technologies, intended to optimise communications during emergencies and can be converted into a LTE base station by plugging in a Network in a Box (NiB)

Specifications:

- » Deployable within 15 minutes
- » Uses a Hybrid IPPBX having both VoIP and TDM Voice capabilities
- » Powerful Voice and Video DSPs to deliver high performance encoding decoding & conferencing features
- » Can be integrated with existing legacy interfaces through gateways
- » Supports Encrypted VPNs

COMPANY : Tata Advanced Systems Limited
CONTACT : tata-and@tataadvancedsystems.com

ERDA EMI /EMC TESTING FACILITY AS PER MIL-STD-461



MIL-STD-461 specifies the requirements for the control of electromagnetic interference characteristics (emissions and susceptibility) of electronic, electrical, and electromechanical equipment/system/ subsystems (Rack mount/Wall mount/ Floor standing) designed for various agencies of the Department of Defence (DoD). MIL-STD-461 has been an active document since 1967 and has undergone several revisions over the years due to changes in Electromagnetic Environment (EME) caused by the rapidly increasing use of electronics and advancements in technology.

ERDA is approved by Integrated Headquarters, Ministry of Defence (Navy) for EMIEMC testing of naval equipment and take up various testing as per Department of Defence (DoD) test codes (as per MIL Standard 461 E/F)

ERDA has vast EMIEMC testing experience of different electrical and electronics products made for defence application like control panels for Missile launcher , Missile controller, Radar System, Flood detection for Navy application & Motors for Naval application.

ERDA is fully equipped, capable and accredited as per ISO/IEC 17025: 2017 to perform testing as per E & F revisions of MIL-STD-461. ERDA is equipped with 10 meter Semi Anechoic chamber having 3 ton weight bearing capacity to accommodate big & bulky equipment. In-house testing of equipment, in excess of 20 feet in length and weighing up to 3 tons is already performed.

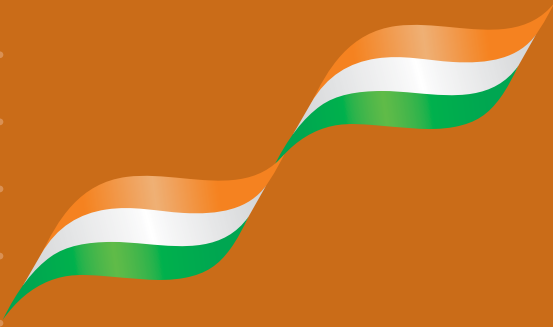
Tests undertaken at ERDA as per MIL-STD-461 Revision E & F

TEST NAME	TEST DESCRIPTION
CE 101	: Conducted Emissions, Power Leads,30 Hz to 10 kHz
CE102	: Conducted Emissions, Power Leads,10 kHz to 10 MHz
CS101	: Conducted Susceptibility, Power Leads,30 Hz to 150 kHz
CS114	: Conducted Susceptibility, Bulk Cable Injection, 10 kHz to 200 MHz
CS115	: Conducted Susceptibility, Bulk Cable Injection, Impulse Excitation
CS116	: Conducted Susceptibility, Damped Sinusoidal Transients, Cables and Power Leads,10 kHz to 100 MHz
RE101	: Radiated Emissions, Magnetic Field,30 Hz to 100 kHz
RE102	: Radiated Emissions, Electric Field,10 kHz to 18 GHz
RS101	: Radiated Susceptibility, Magnetic Field,30 Hz to 100 kHz
RS103	: Radiated Susceptibility, Electric Field,2 MHz to 18 GHz(up to 50V/M)

COMPANY : Electrical Research and Development Association (ERDA)
CONTACT : rajib.chatopadhyay@erda.org







OTHER SYSTEMS

NICKEL ALLOYS, COBALT ALLOYS, TITANIUM ALLOYS AND SPECIAL STEEL PRODUCTS



INGOTS / CAST STICKS

Characteristics – Remelted Ingots / Cast Sticks of Super alloys, Titanium alloys and Special steels processed through different melting furnaces like Electric Arc furnace / LF / VOD / Vacuum Induction Melting / Vacuum Arc Remelting / Electro Slag refining.
Size (dia) – 50mm to 1050mm
Weight – 0.6T to 20T



BARS & WIRES

Characteristics – Bars, rods & wires of Super alloys, Titanium alloys and Special steels processed through Hot Rolling, Cold Drawing & Hot Swaging.
Size (dia) – 0.8mm and above
Shape – Round and Square
Supply form – Spools, Rods and Bars



NSN 9505720491180



FORGINGS

Characteristics – Forged bars / billets of Super alloys, Titanium alloys and Special steels processed through 6000T / 1500T Hydraulic Forge press.
Size (dia) – 100mm to 1000mm
Weight – Upto 4.5T

NSN 1450720491183



RINGS

Characteristics – Rings of Super alloys, Titanium alloys and Special steels processed through Radial Axial Ring Rolling Mill.
Size (OD) – 320mm to 3540mm
Height – 50mm to 635mm
Weight – Upto 3.5T

NSN 1450720492422



PLATES / SHEETS

Characteristics – Wide plates / sheets of different materials like Super alloys, Titanium alloys and Special steels processed through hot stackle mill & cold rolling mills.
Thickness – 5mm and above
Width – Upto 3000mm
Length – Upto 10000mm
Equipment – Cold Sheet mill
Thickness – 0.8mm and above
Width – Upto 1200mm

NSN 9535720399826



INVESTMENT CASTINGS

Characteristics–Investment castings of Super alloys, Titanium alloys and Special steels processed through Vacuum Melting Furnace / Skull melting furnace.

Weight – Upto 200Kgs

COMPANY : Mishra Dhatu Nigam Limited
CONTACT : mktg@midhani-india.in

NON-PRESSURE BEARING PARTS OF SMALL ARMS



Description:

Complex-shaped metal parts manufactured by Metal Injection Moulding, as per customer drawings. The examples include Non-Pressure Bearing Parts such as Safety, Sears, Triggers, Extractors, Hammers, Ejectors, Housing, etc.

Specifications:

- » Parts made by Metal Injection Molding (MIM) are assembled in the following small arms :
- » Rifles of Calibre 5.56 mm, 0.22", 7.62 mm, 0.315"; Pistols of Calibre 9 mm., 0.45", 0.357" Revolvers of Calibre 22 mag, 0.32". These are made using hardened steels such as MIM Fe-2% Ni, MIM S7, MIM 9310, MIM 4340, MIM 4140, etc.

COMPANY : Indo-MIM Pvt. Ltd.
CONTACT : infohq@indo-mim.com





WEAPON & EQUIPMENT INDIA LTD. MUNITIONS INDIA LTD	
WEAPON & EQUIPMENT INDIA LTD.	
WEAPON & EQUIPMENT INDIA LTD.	
WEAPON & EQUIPMENT INDIA LTD.	
WEAPON & EQUIPMENT INDIA LTD.	
WEAPON & EQUIPMENT INDIA LTD.	

MECHANICAL AND MECHANICAL TRIGGERS & SAFE AND ARMING DEVICES

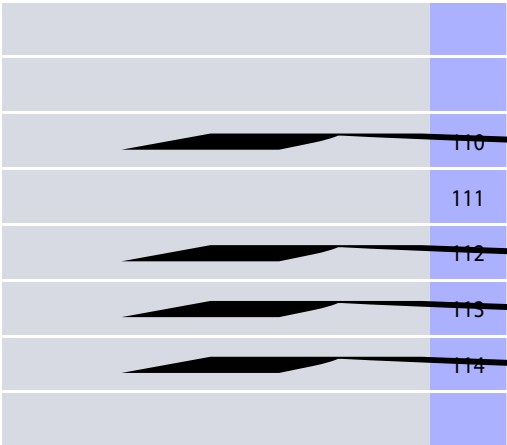
SANDEEP METALCRAFT PVT. LTD.	74
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COMBAT MANAGEMENT SYSTEM (CMS)

BHARAT ELECTRONICS LIMITED,
TATA ADVANCED SYSTEMS LIMITED

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LCA TEJAS

HINDUSTAN AERONAUTICS LIMITED

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VERTICAL	PRODUCT	MANUFACTURING COMPANY	PG NO.
COMMUNICATION SYSTEMS	VEHICLE BASED SATCOM FOR DISASTER MANAGEMENT (MODEL)	ALPHA DESIGN TECHNOLOGIES PVT. LTD.	139
	CB/LB FIELD TELEPHONE PTR1000+	ALPHA DESIGN TECHNOLOGIES PVT. LTD.	139
	SOFTWARE DEFINED RADIO (SDR)	ALPHA DESIGN TECHNOLOGIES PVT. LTD.	140
	MULTIBAND CELLULAR & BWA JAMMER	ALPHA DESIGN TECHNOLOGIES PVT. LTD.	140
	VHF BASE STATION LVM 342	BHARAT ELECTRONICS LIMITED	141
	V/UHF AM/FM TRANSCEIVER LUP 329	BHARAT ELECTRONICS LIMITED	141
	SOFTWARE DEFINED RADIO MANPACK (SDR)	BHARAT ELECTRONICS LIMITED	141
	COMMUNICATION SYSTEMS	ELCOM INNOVATIONS PRIVATE LIMITED	142
	MOBILE EMERGENCY COMMUNICATION SYSTEM (MECS)	TATA ADVANCED SYSTEMS LIMITED	143
	SATELLITE MONITORING	VEHERE INTERACTIVE PVT. LTD.	144
	CYBER INTELLIGENCE & CYBER SECURITY SOLUTIONS	VEHERE INTERACTIVE PVT. LTD.	144
	ERDA EMI /EMC TESTING FACILITY AS PER MIL-STD-461	ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION (ERDA)	145
OTHER SYSTEMS	COMBAT TRAINING CENTRE (CTC)	ZEN TECHNOLOGIES LIMITED	148
	NICKEL ALLOYS, COBALT ALLOYS, TITANIUM ALLOYS AND SPECIAL STEEL PRODUCTS	MISHRA DHATU NIGAM LIMITED	149
	NON-PRESSURE BEARING PARTS OF SMALL ARMS	INDO-MIM PVT. LTD.	150
	AIRFRAME STRUCTURES & ENGINEERED PRODUCTS	DYNAMATIC TECHNOLOGIES LIMITED	151





✉ epc@ddpmod.gov.in

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