INDIAN DEFENCE INDUSTRY
A GLOBAL REACH
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 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 aims to showcase the various tried and tested weapon systems that are currently operational and provides an insight into a wide range of products developed by Indian defence industries for Indian defence forces and which are available for exports with Government approval.
AKASH

DESCRIPTION:
AKASH Weapon system is an all-weather, Area Defence System for defending Vulnerable Areas/points against penetrating targets at low, medium and high altitudes. The system can engage multiple targets simultaneously.
- Target types: Helicopters, fighter aircraft, UAV etc.
- High immunity against active and passive jamming.
- Fully automatic with quick response time from target detection to kill
- Adaptable to existing and futuristic Air defence environment.
- Secured mode of communication among combat elements.
- Self-sufficient in electrical power with in-built power source.
- Road and rail transportable with quick mobilization and deployment capabilities.
- In-built safety features with secured IFF.

COMPANY: BRAHMAK DYNAMICS LIMITED
CONTACT: bdol@bdi-india.in
NSN 140703471556

BRAHMS WEAPON SYSTEM

DESCRIPTION:
BRAMHOS is a Supersonic Cruise Missile which can be fired from various platforms and under stringent launch conditions has established accuracy, reliability, ease of operation, faster reaction time and practically no possible countermeasures. BRAMHOS missile has identical configuration for land, sea, sub-soil and air platforms. It is launched from a container, which also acts as a storage cum transportation container. It has a shorter flight time leading to lower target dispersion and quicker engagement. BRAMHOS missile has a wider range of flight trajectories and operates on “Fire and Forget” principle.

SPECIFICATIONS:
- Range of 250 km
- Speed up to 2.8 Mach all through the flight
- Flight Altitude: 5 m to 35 km
- Warhead: Up to 100 kg conventional

COMPANY: BRAHMS AERO SPACE PRIVATE LIMITED
CONTACT: praveenpathak@brahmos.com

SPECIFICATIONS:
- Effective range: 3-15 km
- Speed range: 1.8 – 2.5 Mach
- Altitude of operation: 30 m – 18 km
- Propulsion system: Two stage solid integral Rocket – target system
- Length: 9.97 m
- Diameter: 350 mm
- Weight: 720 kg
- Warhead type: High explosive, penetrator warhead with proximity fuse
- Detonation mechanism: NF proximity fuse
- Guidance system: Digitally coded command guidance system.
**MILAN-2T**

**DESCRIPTION:**
Milan-2T is a man-portable (infantry) second generation ATGM, with tandem warhead to destroy turrets fitted with Explosive Reactive Armor for both moving & stationary targets. It is wire guided, highly reliable and requires no maintenance/prefire checks.

**SPECIFICATIONS:**
- Calibre: 115 mm
- Length: 3167 mm
- Weight: 23 kg
- Range: 25-1850 m
- Penetration: >270 mm
- Flight time: 32.5 sec
- Reliability: 95%

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

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**DHANUSH**

**DESCRIPTION:**
Dhanush is the state-of-the-art gun system with an effective range of 38 km in plains and is equipped with high performance sight system: I2S3 based sighting system, dual-laying system and on-board ballistic computation and advanced day and night firing system. Dhanush is a multi-terrain weapon platform and is capable to negotiate and deploy itself in difficult hilly and mountainous terrain as well as in deserts. The barrel is 155 x 45 calibre with 23 life Chamber volume and IRRNIV compliant, compatible to both modular and bag charge system.

**SPECIFICATIONS:**
- Calibre: 155 mm
- Weight < 12 Tons (approx.)
- Range: Max. 38 km with CTHB BR on plains
- Elevation: Max. up to 70° (1245 mls). Min. up to -3° (~53 mls)
- Ammunition: HE M 101, CTHB-BT (HE), CTHB-BR (HE), Illuminating, Smoke and is Compatable with all NATO 155mm Ammunition System

**COMPANY:** OFB
**CONTACT:** export.ofb@ofb.in
**MSN:** 1051720471000
ADVANCED TOWED ARTILLERY GUN SYSTEM

DESCRIPTION:
The Advanced Towed Artillery Gun System is a 155mm 52 calibre artillery system jointly designed and developed by 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.

SPECIFICATIONS:
• 155 mm 52 Calibre Gun System
• Firing range of 48.074 km (HE-FNFB BR) & 38.549 km (HE-FNFB BT)
• Zero backlash Electrical drives: Hydro-electric gun system
• System has ability to fire Zero 7 change
• Elevation Angle -3° to +70° with the speed of 5/15
• Ground clearance 450 mm
• Self-propelled capability with a speed of 20 kmph

COMPANY: BHARAT FORGE LIMITED
CONTACT: navin.singh@bharatforge.com

VAJRA

DESCRIPTION:
The MR Vajra-T gun system has proven to withstand extreme weather conditions both in severe 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.

SPECIFICATION:
• 155 mm/52 calibre tracked self-propelled gun system

COMPANY: LARSEN & TOUBRO LIMITED
CONTACT: info.defence@larsentoubro.com
BHARAT-52

DESCRIPTION:
It is a long range 155 mm/52 caliber towed gun, providing a highly manoeuvrable field artillery solution. It has been designed for accuracy, stability and reliability during firing maneuvers. It has a self-suspension arrangement which is achieved by using walking beams system which provides ease of maintenance. It has self-propelled capability with a speed of 55 kmph and is able to drive 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 10354 mm x Width 2880 mm x Height 2656 mm
- Arc of fire (Transverse angle of fire): 35° to right and left, with the speed at 575°
- Elevation-Angle: -8° to +70° with the speed at 575°
- Steering: Crown-by-crown method for maneuvering the artillery
- Deployment time: 1 minute in day, and 1.5 minute in night
- Weight: 35 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 10 sec
  - Interim rate of fire: 12 rounds in 5 min
  - Sustained rate of fire: 42 rounds in 8 hr

COMPANY: BHARAT FORGE LIMITED
CONTACT: mahit.singh@bharatforge.com

UPGRADED L-70 GUN

DESCRIPTION:
L-70 Gun Upgrade is a fusion of the latest technologies in the areas of Electrical Servo Drives, Electro-Optical Fire Control System and Video Tracking. It has an Integrated Fire Control System with Optic Sight Consisting of Eye SAFE, D2Y and TL.

SPECIFICATIONS:
- Modes of Operation: Remote Power Control, Local Power Control & Back-up Mode
- Power Source: 2 Batteries with Charger and D.G Set.
- Drive specifications:
  - Ammunition: 369 rounds
  - Elevation Travel: -5° to 85°
  - Laying Accuracy: 0.5 mil (0.0028 deg)
  - Daylight TV Camera Magnification: 9 x (teles.), Field-of-view 8.5° to 40 °
  - Thermal Imager Wavelength: 3.3 – 5.6 μm, Field-of-view: 3.6° to 25° continuous zoom

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: mms@bel.co.in
MSI: 189723444079

GARUDA-105

DESCRIPTION:
Garuda 105 is a light weight field gun based on the 105 Indian Field Gun and incorporates state-of-the-art soft recoil technology resulting in a lightweight, modularity, high performance howitzer that can be designed to be integrated with many types of combat transportation. It has wheel and sect capability.

Garuda 105 is ultra-light gun system which utilizes the high end Soft Recoil Technology. This allows the weapon (gun) to be placed on light vehicles and nonstandard platforms, including aircraft and coastal and river patrol watercraft. This high tech system is a force multiplier for the forward forces and will prove to be a complete game changer in the realm of weapon systems.

SPECIFICATIONS:
- 105 mm 37 Calibre Gun System
- Extremely light weight: less than 3 ton
- Ordnance used: Existing 105 LFLG
- Digital fire control; electrically controlled elevation and traverse
- Elevation and Traverse-Elevation: -7° to 70°, Traverse 360°
- Rate of Fire-Normal Rate: 4 rds/min, Intermittent Rate: 6 rds/min

COMPANY: BHARAT FORGE LIMITED
CONTACT: mahit.singh@bharatforge.com
ZU 23 UPGRADE

DESCRIPTION:
The ZU-23 Upgrade converts the manually-launched gun into an 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.

SPECIFICATIONS:
- Modular construction for easy maintenance

COMPANY: LARSEN & TOUBRO LIMITED
CONTACT: info.defence@ltnlbs.com

UPGRADED SCHILKA WEAPON SYSTEM

DESCRIPTION:
The Ugraded Schilka system is a ZSU 23 mm, 4 barrel, advanced all-weather self-propelled Air Defence Weapon System primarily designed to protect mobile formations against aircraft and helicopters. It consists of state-of-the-art 3D planar Active Phased array solid state Radar and Electro Optical Fire Control system that ensures day and night capability for detection, acquisition and tracking of targets. The various phases of operation such as rapid acquisition of fast moving target, determination of the aiming point for the guns and ballistic of the projectiles, rapid laying of the guns on to the target and firing can be carried out when the vehicle is on the move at full speed. It has built-in simulator for operator training and has Nuclear Biological Chemical (NBC) protection system.

SPECIFICATIONS:
- Caliber : 23 mm
- No of Barrels : 4 x Automatic
- Water-cooled barrels
- Rate of Fire : 4,000 round/minute
- for 4 guns
- Max Range : 2000 m

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info.bel.co.in
MSM 29507394441440

COMPANY: HISUN ELECTRONICS LIMITED
CONTACT: info@hisun.com
MSM 29507394441440

WHEELED AMPHIBIOUS PLATFORM (WhAP) 8X8

DESCRIPTION:
WhAP (tuned Factory) is a Wheeled Amphibious Infantry Combat Vehicle jointly designed and developed by DODS and VSDC. Its hull under classic drive line with double wish bone type independent hydro-pneumatic suspension provides mobility across all kinds of terrain-land and water.

SPECIFICATIONS:
- 600 HP High Power Engine with Automatic Transmission in power pack concept
- Modular Architecture for multiple variants on same platform
- Scope for Enhanced Ballistic Protection, up to Trauma Level-4.
- Strong uprated drive line with hydro pneumatic suspension
- Open Electrical Architecture for any “Mission Kits”
- Advanced Environment Control for Ambient temperatures up to 55 degree Celsius.
**WEAPON LOCATING RADAR**

**DESCRIPTION:**
Weapon Locating Radar (WLR) has been primarily designed to locate hostile guns, mortars and rockets. WLR, in its secondary role, can track and observe the fall of shot from own weapons to provide corrections to own fire. Detection, location and tracking of the required targets is handled by the advanced algorithms and State-of-the-art hardware. It has an Electronically scanned Phased Array Antenna.

The ability to locate enemy weapons from its first round and transmit the data of the required target to counter fire elements for retaliatory strike before the target is repositioned is the key feature of the radar with built in system BIT and a remote display.

**COMPANY:** BHARAT ELECTRONICS LIMITED
**CONTACT:** info@bel.co.in
**WHN:** 12897204451881

**SPECIFICATIONS:**
- **Weapon Locating Range:**
  - 45 mm or Larger Mortars: 4 to 20 km
  - 106 mm or Larger Guns: 6 to 35 kms
- **Free Flight Rockets:** 6 to 40 km
- **Simultaneous Targets tracked:** 7 (maximum)
- **Time to bring Radar into action:** 30 minutes
- **Time to bring Radar out of action:** 15 minutes
- **Range:** 50 km
- **Frequency Band:** C band
- **Elevation Coverage:** 0º to 60º
- **Shear, Vibrations:** As per IJS 5555
- **EMC/EMI:** MIL STD-461B

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**BATTLEFIELD 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 simultaneously 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 3-band Pulse Doppler Radar with built in test equipment (BITE) and built-in digital magnetic compass for North alignment. It is used for broader surveillance, battlefield surveillance, Intelligence gathering, Prevention of sensitive sites and Prevention of infiltration and illegal immigration.

**COMPANY:** BHARAT ELECTRONICS LIMITED
**CONTACT:** info@bel.co.in
**WHN:** 12897204451881

**SPECIFICATIONS:**
- **Range Accuracy:** 20 m m.s
- **Range Resolution:** 50 m
- **No of tracked targets:** up to 99
- **Target identification:** using Doppler tones
- **Power supply:** 24 Volts DC nominal
- **Power consumption:** 300 watts
- **Weight:** System including accessories: 30 kg
- **Operating temperature:** -20ºC to +55ºC
- **Relative Humidity:** up to 95% at 40ºC
- **Altitude:** 5000 meters
- **Wind load (operational):** 80 knph

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**3D LOW LEVEL LIGHT WEIGHT RADAR (ASELSHA)**

**DESCRIPTION:**
ASELSHA is a multifunction 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. Aselsha detects and tracks heterogeneous air targets, including helicopters, fighters and utility at low and medium altitudes. It can be easily transported by men, light vehicles and under sling by helicopter and is fast and easy to install and deploy. 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 Astern protocol.

**COMPANY:** BHARAT ELECTRONICS LIMITED
**CONTACT:** info@bel.co.in
**WHN:** 12897204451881

**SPECIFICATIONS:**
- **Environmental:** IJS 5555 compliant
- **Elevation coverage:** 30 m to 4500 m (AGL)
- **Elevation coverage:** 0 to 100º
- **Power source:** Generators with UPS and Battery
- **Power consumption:** < 1 Kw
- **Accuracy:**
  - **Range:** < 50 m
  - **Azimuth:** < 0.50
  - **Height:** < 500 m
  - **Resolution:** Range: < 200 m, Azimuth: < 70
MILITARY VEHICLES

DESCRIPTION:
Ashok Leyland has vehicles for Defence in Light, Medium & Heavy Duty segments. Ashok Leyland provides different power packs for Armored Fighting vehicles and self-propelled guns, power pack for different uses including Cam sets and 14 to 80 seater buses. These vehicles are used for a variety of applications apart from normal lead carrier to Ambulance, Recovery, Fire Fighting, Refrigerated Lorry, Fuel & Water Bowser, Rocket Launcher, Radars, Missile.

SPECIFICATIONS:
- Product range: 1T GVW (Gross Vehicle Weight) to 100T GVW (Gross Trailer Weight)
- Vehicles for Defence in Light, Medium & Heavy Duty segments
- Configuration of 4x4, 6x6, 8x8, 10x10 for high stability
- Medium Bullet Proof Vehicles (MPV 4x4)
- Mine Protected Vehicle (MPV 4x4)
- Personnel Protected Vehicle (PPC 4x4)

COMPANY: Ashok Leyland
CONTACT: sales.ashok leyland.com

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.

SPECIFICATIONS:
- Dimensions: 5.50 m (length), 2.10 m (width), 2.07 m (Height)
- Ground Clearance: 305 mm
- Speed: 85 kmph max
- Full load Speed: 50 kmph
- GVW/Tax Load: 33 tons/1400 kgs
- Range: 1000 km
- Protection Level: Mine Blast 14 kgs TNT under wheels
- 10 kgs TNT under Hull
- Small Arms: 7.62 SLR rifle firing from a distance of 10 meters on all sides of vehicle

COMPANY: OER
CONTACT: export.obr@oer.in
PINAKA MULTI-BARREL ROCKET LAUNCHER

DESCRIPTION:
The Pinaka Multi-Barrel Rocket Launcher (MLRL) system is a high-tech, all-weather, long-range, area fire artillery system built on an 8x8 chassis with high cross-country mobility. It is fitted with electro-mechanical outriggers with an auto leveling feature to stabilise the launcher during launch.

SPECIFICATIONS:
- Range: Over 40 km
- Ready to fire rockets: 12 (6x2)
- Control of Firing: Auto/Manual
- Firing Mode: Single/Sequential
- Time to fire valve: 12 rockets: 44 seconds
- Area coverage: 1200 m x 800 m
- Shoot and scoot capability (fast coming in and out of action) (<9 min)
- Crew: 4

COMPANY: LARSEN & TOUBRO LIMITED
CONTACT: info@larsenandtoubro.com

SARVATRA BRIDGE SYSTEM

DESCRIPTION:
Sarvatra bridge system is an optimally designed scissor launch system with state of the 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 3 (Euro III) 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: office@expart.beem.co.in
PONTOON BRIDGE SYSTEM

DESCRIPTION:
The bridge has a maximum load carrying capacity of 60 tonnes and can transport military vehicles over water obstacles and manmade 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 @ 1800 rpm, Max Torque 1840 Nm @1200 rpm.
- Transmission: 10 forward and 2 reverse gears.
- Suspension: Front: Leaf springing type and Telescopic shock absorbers. Rear: Leaf springing.
- Brakes: Two circuit drum set brakes with each type actuator.
- Steering: Mechanical, Power assisted by hydraulic steering.
- Bridge length: 237 meters

COMMUNICATION INTEGRATED ELECTRONIC WARFARE SYSTEM

DESCRIPTION:
The Communication Integrated Electronic Warfare System is an Integrated Electronic Warfare system and operates in HF and VHF band. It consists of three independent functional blocks also called as Control Centre (CC) Blocks and comprises of total of 76 Entity and Camouflaged Vehicles. Each entity is realized in slip-on ISO shelters installed on 2.5 ton vehicle. The system is designed to function in an integrated mode where each CC entity is connected with other functional entities with secure intra-system communications with state-of-the-art ECM features with suitable backup radios.

SPECIFICATIONS:
- Each CC block covers the functionality of Search, Detect, Monitor, Recording & Analysis of hostile threats of FFPR and Burst signals and also covers the functionality of Direction Finding, Location Finding and Jamming of the hostile threats.
- Each CC block is configured with seven types of functional entities namely CC, CSIS, RFS, SDDS, JSHF, JSSU and RMRS.
- CCS has capability to intercept and jam GSM and CDMA based cellular radio transmissions.

COMPANY: BHEL LIMITED
CONTACT: office@bhel.bom.co.in

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bale.co.in
GROUND-BASED MOBILE ELINT SYSTEM (GBMES)

Description:
Ground-Based Mobile ELINT System is capable of detection, monitoring, location finding, complete analysis of RF signals in the frequency range of 70 MHz to 40 GHz. The System is configured on indigenous developed Antennas, D/F & Receiver Technologies.

Company: Bharat Electronics Limited
Contact: ir@bel.co.in

155-MM HE-ERFB BT

Description:
Rapid and accurate firing at long ranges to attack the ground targets.

Specifications:
- Maximum Range: 30 km
- Compatible Fuzes: PDG - 5/2 G & WKB P/W 3 A
- Compatibile Charge: Charge 8
- Shell Life: 10 years

Company: OFB
Contact: expert.ofb@ofb.in

INSTAVEST G6

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 donning and doffing 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-lightweight Armour plate

Company: NIK LIMITED
Contact: r.gupta@nikel.com

ADVANCED COMBAT HELMETS

Description:
Bullet-proof advanced combat helmets are manufactured using special trauma reduction technology that results in just 10 mm blast trauma which is nearly 40% lower in comparison to a standard helmet. The NIK Helms® — W-290 technology used in NIK Helms ensures zero compromised areas in the helmet shell providing uniform protection across the ballistic shell protects against stray and traditional painted helmets in situations where the high velocity threat hit the helmet.

Specifications:
- Flame & UV resistant
- Manufactured using Nontoxic material as per DOP/IS/AC
- Jointless rubber edge guard
- Compatibly with NIK Gas Masks, Communication systems etc.
- Level IIA protection with V56 up to 750 m/s

Company: NIK LIMITED
Contact: r.gupta@nikel.com

BALLISTIC SHIELDS

Description:
Handheld and trolley mounted ballistic shield with large view ports and transparent armour offering enhanced coverage during counterterrorism, insurgency and riot control operations.

Specifications:
- Made from non-toxic materials
- Flame, UV resistant
- Ballistic glass or view port for clear vision and enhanced field view (FOV)
- Abrasion resistant Neoprene rubber edges
- Available in flat or curved (750 R or 560 R) geometry
- Ambidextrous handle with nylon neck and shoulder strap

Company: NIK LIMITED
Contact: r.gupta@nikel.com
**BALLISTIC PROTECTION**

- Armored Ceramic KAC (Caracoma) Plates
- Tactile for Light Weight Armour
- Personal Ballistic Protection
- Ballistic Vest & Jackets
- Armour Plates
- Ballistic Helmets
- Ballistic Shields
- Lightweight armour solutions for Aircraft, Helicopter/Vehicle/Boat
- Tank, Artillery and Muzzle Munitions

**SPECIALISTICS:**
- Body Armour & Ballistic Shields: Protection of NIJ Level IIIA to IV
- Armour Plates: Stand alone or ICC with protection of NIJ Level III, IIIA 30, IV, all shapes and sizes
- Ballistic Helmets: For protection of NIJ Level II, III, IIIA & IV, all sizes and designs (PASGT, ACH, MICH, TIC, etc.)
- Armour solutions: For protection of STANAG Level I to 5 and Blast Protection
- Tank armour: 110 mm and 135 mm (M2A4 and M2A5)
- Artillery ammunition: 155 mm, 203 mm, 122 mm (F120 and HVG)
- Mortar Bomb ammunition: Augmented Cartridges and Transparent Cebusoid Sheets

**COMPANY:** SLM CARAPACE ARMOR
**CONTACT:** contact@slmquipco.com

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**HIGH ENERGY MATERIALS & MULTI MODE HAND GRENADE**

- High Explosives: RDX, PETN, 2,4,6-Trinitrotoluene (TNT)
- Metal laminated with steel or composite

**SPECIALISTICS:**
- RDX: High Explosives, Metal laminated with steel or composite
- PETN: High Explosives, Metal laminated with steel or composite
- 2,4,6- Trinitrotoluene (TNT): High Explosives, Metal laminated with steel or composite

**COMPANY:** Solar Industries India Limited
**CONTACT:** solar@solargroup.com

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**CMDS (COUNTER MEASURE DISPENSING SYSTEM)**

- Countermeasure dispensing system
- Countermeasure dispensing system
- Multi-mode hand grenade

**SPECIALISTICS:**
- CMDS is a microcontroller based airborne defensive system
- Can be activated either by pilot or RWR
- Protects the aircraft against RPA/guided and IR seeking missiles
- Can be mounted on fixed or rotary wing aircraft

**COMPANY:** DURAI DYNAMICS LIMITED
**CONTACT:** bd@ddindia.in

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**HAND HELD / HELMET MOUNTED NIGHT VISION DEVICES (MODEL: NETHRA)**

- Night Vision Goggles (NVG)
- Helmet Mounted Night Vision System (HMNVS)
- Multi-function battlefield NVG

**SPECIALISTICS:**
- High Definition Night Vision
- Infrared/Visible Light
- Night Vision Goggles (NVG)

**COMPANY:** ALPHATRON TECHNOLOGIES PVT. LTD.
**CONTACT:** alpha@alphatronindia.com

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**DESCRIPTION:**
- NETHRA is an uncooled thermal sight which can view through dust, smoke, fog, haze and other obstructions
- It is a Helmet Mounted Night Vision Device
- It is used for night vision and daytime operations

**SPECIALISTICS:**
- Spectral Range: 8-14 μm
- FPA Resolution: 640x480 or better
- Lightweight: Under 3.5 kg
- Can be used as a Weapon Mounted Sight
- Helmet Mounted Sight

**COMPANY:** NETHRA Technologies
**CONTACT:** nethra@nethra.com
ANTI-SUBMARINE WARFARE CORVETTE

DESCRIPTION:
Anti-Submarine Warfare Corvette (ASW-C) is a free-tie 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 IRES 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).

SPECIFICATIONS:
- Length Overall (LO) 109.10
- Breadth (BE) 14.17
- Depth (D) 8.5
- Displacement (D) 3200 approx
- Max Speed (v) 25 knot

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

OFFSHORE PATROL VESSEL (OPV)

DESCRIPTION:
The Offshore Patrol Vessel is equipped with sophisticated state of the art of weapons and sensors viz. Rollons anti-aircraft gun, Rarden Decca 1979 search radar and HSL 2450 navigation radar. The Vessel is equipped with a major system, Attack-2000 for long range search and surveillance. The Vessel is equipped with a Radar-Mesh-Tracker system for helicopter handling. This provides a clear deck for live-operations without the attendant all-weather limitations. A state-of-the-art navigation & communication equipment with Integrated Bridge System is provided with modular. Most of options are available for 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 missions and/or requirements of the customer.

SPECIFICATIONS:
- Length 150.0 m
- Breadth 11.50 m
- Speed: 22 knots, speed achieved @ 81% MCR
- Range: 7000 Nm
- Power: 4450 kw at 150 rpm

COMPANY: HINDUSTAN SHIPYARD LIMITED
CONTACT: mprojectinfo@hsng.in

ADVANCE OFFSHORE PATROL VESSELS

DESCRIPTION:
Advanced Offshore Patrol Vessel (AOPV) is designed for patrolling and policing maritime zones, search and rescue, pollution control, external fire fighting and embarkation & operation of a second Light Helicopter for long range all time search and surveillance. The Vessel has a rail-less Mesh-Tracker system for helicopter handling. This provides a clear deck for live-operations without the attendant all-weather limitations. A state-of-the-art navigation & communication equipment with Integrated Bridge System is provided with modular. Most of options are available for 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 missions and/or requirements of the customer.

SPECIFICATIONS:
- Main Engine: 2 x Diesels Engines 12 x 9900 kw
- Speed: Not less than 25 Knots
- Endurance: Not less than 6000 miles
- Armament: 1 x 30mm Gun with FCS + 2 x 40mm Gun with FCS
- Aviation: Operation & embarkation of 1 x twin engine helicopter of AUV 6800 kgs

COMPANY: GR Syrius Limited
CONTACT: tsp_office@gdschyrids.com
MSM 1944270412911
**FAST PATROL VESSELS**

**DESCRIPTION:**
Primarily designed for patrolling, anti-smuggling and anti-terrorism operations, it can also support the Navy during wartime as a coastal convoy escort and as a communication link. The hull of the vessel is of steel and strong enough to withstand constant heavy sea conditions. Fully air-conditioned accommodation is provided for 35 men on board. These vessels have been proven during challenging situations and natural disasters like tsunamis. Two Fast Patrol Vessel have been exported to Mauritius.

**SPECIFICATIONS:**
- **Length Overall:** 55.44 m (incl. Waterline)
- **Breadth (mld.):** 25.0 m
- **Displacement:** 270 tons
- **Main Engine:** 3 x MTU-2000 M 90
- **Total Power:** 9 x 2270 hp
- **Speed:** 30 knots
- **Range:** 1500 Nm at 12-14 knots
- **Endurance:** 7 days

**COMPANY:** GOGA SHIPYARD LIMITED
**CONTACT:** info@goagohyundai.com
**MSN:** 19401298473511

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**HIGH SPEED PATROL BOAT**

**DESCRIPTION:**
The boat is a daylight surveillance and investigation vessel operating in shallow coastal waters and around harbour and anchorage. The boat is highly seaworthy and unsinkable type and is able to execute operations up to sea state 3 in open sea and also in breaking sea waves near the coast while in shallow water. The boat has propulsion & power generation, lifesaving & ballast protection and other engineering and electrical systems to carry out safe and reliable operations.

**SPECIFICATIONS:**
- **Length Overall:** 15.00 m (including aft platform)
- **Speed:** 30 knots
- **Range:** 8 hours in the area of operation
- **Main Engine:** 2 x Caterpillar C3 ASSET 360 hp @ 2500 rpm inboard diesel engines

**COMPANY:** GOGA SHIPYARD LIMITED
**CONTACT:** info@goagohyundai.com
**MSN:** 19401298473529

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**FAST INTERCEPTOR BOATS**

**DESCRIPTION:**
The Fast Intercept 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 5 and capable of withstanding 4G acceleration and can withstand rough waters and seaway 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 (3) knots
- **Range:** 350 Nm with 25% reserve
- **Main Engine:** 2 x Cummins QSC8.3 500101 BHP @2500 rpm Diesel Engine
- **Propulsion:** 2 x Waterjet Kanemco FS10

**COMPANY:** GOGA SHIPYARD LIMITED
**CONTACT:** info@goagohyundai.com
**MSN:** 19401298473655
INSHORE PATROL VESSEL (IPV)

DESCRIPTION:
IPV is designed and developed for coastal patrolling, anti-smuggling, search and rescue operations, fisheries protection, monitoring, and providing communications links. It has provision for dynamic reorientation of the ship in the planning made with the use of interceptors.

SPECIFICATIONS:
- LBP: 8.6 m
- Displacement: 310 tonnes
- Speed: 12 knots
- Endurance: 1,000 Nm

COMPANY: HINDUSTAN SHIPYARD LIMITED
CONTACT: rprojektioe@hindalug.in

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 platforms:

- Equipped with Bow Ramps for handling combat equipment and vehicles.
- Arrangements for transporting and storing equipment/vehicles on main deck.
- Ballast tanks to achieve desired trim and for smooth berthing/non-berthing operations.
- Arrangement to pull in/pull out stranded vehicles on beach using T-Boom having capstan installed on main deck.
- Integrated Platform Management System (IPMS).

SPECIFICATIONS:
- Length Overall (EO): 67.8 ft (approx.)
- Breadth, moulded (mm): 15
- Depth (abreast of Deck No. 1), (mm): 4
- Draught (keel): (m): 1.70
- Displacement (k): 410 (approx.)
- Speed: (Knots) 15
- Endurance: (N) 150 at 12 Knots
- Main Engines: (kW) 2 x 1450
- Diesel Generators: (kW) 2 x 250, 1 x 310
- Firefighting:
  - 01 x Main Water Tank / 04 Nos. Armoured Personnel Carrier (Light Tanks) / 04 Nos. 4 Ton Trucks
- Weapons:
  - 02 Nos. OIM-90 Guns
  - 04 Nos. Medium Machine Guns (MMGs)
  - 02 Nos. Heavy Machine Guns (HMGs)
- Accommodation:
  - Officers: 10
  - Seamen: 46
  - Troops: 100

COMPANY: Garden Reach Shipbuilders & Engineers Limited (GRSE)
CONTACT: marketing@grse.in
描述：
拖船设计用于拖曳和协助海军舰船，对有声和无声潜艇进行水下和水面上的搜索和救援任务，拖曳重达4500吨的船舶。

规格：
- LOA: 34.55米
- 工作范围: 50吨水下拖曳
- 速度: 16节
- 工作小时: 72小时

公司：印度造船有限公司
联系人：srprojectco@hindwire.in

描述：
这是最先进的水下武器。拖曳和引导技术包括声纳引导、超越追击和拦截。其动力来源于海水电池，提供足够的力。

规格：
- 工作深度: 10米-100米
- 最大速度: 32节
- 工作小时: 6小时
- 范围: 5公里
- 重量: 270公斤(水下线型)

公司：印度弹道有限公司
联系人：bdol@bdol-india.in
HEAVY WEIGHT TORPEDO (VARUNASTRA)

**DESCRIPTION:**
It is a state-of-the-art ship launched weapon. It weighs around 3,500 tonnes and carries about 250 kg of explosives at a speed of 38 nautical miles per hour. Its circular trajectory makes it difficult for the enemy to target it and it smashes the target (underwater) from both top and bottom. Equipped with the most advanced automatic and remote-controlled guidance system, the weapon uses its own intelligence to track the target. It is Electric – powered.

**SPECIFICATIONS:**
- Speed: 27 & 40 knots with variable facility
- Homing: Acoustic, Active, Passive, Mixed & Imaging
- ACOM: SBBO (Sensor-Objective Identifications)
- Guidance: Pursuit & Predictive
- Proximity Fuse: Acoustic
- Warhead: Conventional/Insensitive Munitions

**CONTACT:**
- bbd@bdli-india.in

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SUBMARINE FIRED DECOY (SFD)

**DESCRIPTION:**
Submarine Fired Decoy acts as a preferred target in presence of own submarine to a passive or active homing torpedos.

**SPECIFICATIONS:**
- Can function as a preferred target
- Offers zero-response time for launching
- Deployed from signal cartridge-launch tube of a submarine.
- Calibre: 150 mm
- Weight: 9.60 kg
- Power Source: Li-ION Primary Battery
- Endurance: 20 min

**CONTACT:**
- bbd@bdli-india.in
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 3500 m.

SPECIFICATIONS:
- Diameter: 2700 mm
- Height: 1500 mm
- Designation: 2A44
- Caliber: 30 mm
- Rate of fire: Single - 200 to 300 rounds per min,
  Slow - 550 rounds per min
- Breech Type: BMP 2.42

CONTACT: expert.ott@nic.in

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-barel chaff rocket launcher is available both in Long Range and Short Range.

SPECIFICATIONS OF LRML LAUNCHER:
- Overall weight: 1600 kgs
- Overall Height: 2400 mm
- Overall Width: 1300 mm
- Overall Length: 1300 mm
- Mode of operation: Power and Manual
- Bore of barrel: 105.6 + 0.6 mm

CONTACT: expert.ott@nic.in

ASW ROCKET LAUNCHER

DESCRIPTION:
The ship-based anti-submarine weapon system is capable of firing 222 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 3-axis all-electric servo drives. It has been developed for INS and PFR class ships.

SPECIFICATIONS:
- Entirely new design
- Capable of firing 12 radially arranged depth charge rockets
- Supported by Rocket Feed Carriage

CONTACT: intmdefence@larsentoubro.com
TORPEDO LAUNCHERS

DESCRIPTION:
L&T has designed both lightweight and heavyweight torpedoes launchers for Anti-Submarine warfare operations. The lightweight torpedoes launchers (LTL) have triple tube configuration and are installed on P16A class ships of the Indian Navy. The heavyweight torpedoes launchers (HTL) have twin tube configuration and are installed on P16A and P29 class ships. The system is designed with a Power PC-based controller.

SPECIFICATIONS:
- LTL: Firing is achieved by injecting high pressure air at high mass flowrate into the tube.
- HTL: The system is designed for single shot and salvo firing of torpedoes from a remote station through the VAC Mod C Fire Control System.

WM-18 ROCKET LAUNCHER (BEACH CLEARING SYSTEM)

DESCRIPTION:
This weapon system designed for beach-clearing by LST class of ships before executing amphibious operations. The weapon system comprises of two launcher modules, one for each port and starboard. The Rocket Launcher WM-18 can be slaved to a Director Sight and is equipped with a weapon mounting system.

SPECIFICATIONS:
- Comprises two mounts of launchers
- Each launcher mount is controlled by a closed-loop electro-hydraulic control system and is designed for automatic compensation of roll and pitch motions of the ship, which holds the weapon axis fixed with respect to the target.

COMPANY: Larsen & Toubro Limited
CONTACT: info.defence@larsentoubro.com
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 cargo etc.

SPECIFICATIONS:
- LOA : 250.00 m
- Displacement : 65000 tonnes
- Speed : 18 knots speed achieved at 85% mcr
- Power : 9480 kw

COMPANY : HINDUSTAN SHIPYARD LIMITED
CONTACT : mprojctinfo@shipyard.in

FLOATING DOCK

DESCRIPTION:
The L&T Floating Dock is ideal for docking of Naval Assets. Designed for operation alongside a jetty with a mooring system, it meets the stringent military specifications and Classification Society rates. The Floating Dock is capable of meeting end-to-end requirements for repairs of high-end warships and submarines. It also provides accommodation to its crew and the crew of the docked ship, thereby becoming a critical enabler for the Naval Forces. Other features of Floating Dock are as follows:
- Fully-automated Ballast Central System
- Constructed of military grade steel
- Multiple docking capability – warships and submarines
- Retractable cover for all-weather operations
- Fully-astered hoisting system
- Services the needs of docked ships and ships berthed alongside
- Redundancy of critical systems

SPECIFICATIONS:
- Length overall : 145 m
- Breadth between inner walls : 28 m
- Lifting capacity : Up to 10000 T
- Draught of docked ship : 7 m
- Accommodation capacity : 113 persons

COMPANY : LARSEN & TOUBRO LIMITED
CONTACT : info.defence@larsentoubro.com
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 VHF/MF/HF and VHF 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 Radars, monitoring of status and other supervision features. It facilitates remote operation of radio, intercom and radio group working.

SPECIFICATIONS:
- Broadcast reception in VHF band
- Transmission and reception in HF band for long range communication
- Transmission and reception in VHF band for short and medium range (LOS) communication
- Data transmission/reception through High Speed Data Modem on HF link
- SATCOM Equipment
- Remote radio communication/control and intercom over IP technology

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

COASTAL SURVEILLANCE SYSTEM

DESCRIPTION:
The protection of Exclusive Economic Zone (EEZ) particularly of coastal line has become important in view of spreading of illegal fishing, poaching, smuggling and also to protect the sea environment. This necessitates a need for surveillance system for detection, classification and identification of vessels using the territorial waters and also actively help in search and rescue operation.

The Surveillance System comprises of a Network of Radars with a centrally located Central Control and Communication System for Data / Voice connectivity between Radar Stations and Central Centre. The important task of Surveillance System is to detect and identify surface targets / low-flying Helicopters / Aircraft. The classification of targets is made based on the speed data. In order to facilitate identification of targets, Automatic identification System (AIS) is integrated into Radar network. The communication system enables transfer of Radar Track data and AIS track of the surface targets to the Central Centre. An integrated Radar picture of surface and air targets will be available on the display at the Central Centre. The surveillance system also provides communication facility of Data / Voice connectivity between individual Radar stations and Central Centre. For observation and monitoring of shore range targets, Low Light TV Cameras (LLTV) with zoom facility with suitable pan & tilt mechanism can be provided at each radar station as option. This provides a visual image of surface targets upto a range of 50 kms.

SPECIFICATIONS:
- Surveillance Radar is a 3 ft slotted waveguide array
- Automatic identification system works by integrating standard VHF Transceiver with GPS receiver

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in
COMBAT MANAGEMENT SYSTEM (CMS)

DESCRIPTION:
CMS automates tactical data handling from the ship’s sensors and provides a Decisive support system to the command. It gathers data from ships/ helicopters of aircrafts in the fleet through data link to collate, process, integrate and present a comprehensive tactical picture of the area of operation and allows acquisitions, fusion, processes, integrates, normalizes & 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.

SPECIFICATIONS:
- Designates sub-surface, surface and air targets to the fire control system
- Monitors the execution of weapon firing and displays 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 diagnostic tests for off-line health monitoring, maintenance of system and verification of hardware health
- Flexible architecture to facilitate addition / deletion of system components on different types of platforms

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

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-shipping sea-skimming missiles, high speed missile boats and fast cruising Attack Craft (FAC) and provides efficient and comprehensive control of short and medium range guns in anti-air, surface and Naval Gunfire Support (NGS) engagements.

SPECIFICATIONS:
- Azimuth Limit: Panoramic
- Elevation Limits: -80° to +85°
- TV Camera: Continuous Zoom from 16×90 to 1× (1°/v x 1.8V)
- Thermal Imager: Continuous 94 K x Optical Zoom
- Laser Range Finder: Eye safe type with beam wavelength of 1.54 µm, Beam width - 0.2°, SRH/UR glass
- Operating Temperature: -30°C to +55°C
- EMV: As per MIL-STD-461E
- 2 axes Gyre Stabilized

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in
LCA TEJAS

DESCRIPTION:
Tejas Indian Light Combat Aircraft (LCA) together with its variants, is the smallest and lightest Multi-Role Supersonic Fighter Aircraft in its class. This single engine, Canards-Delta Wing, Tailless Aircraft is designed and developed by ADA with HAL as the principal partner along with DRDO, CSIR, BEL, BDL and IN to meet diverse needs of the Indian Air Force (IAF) and Indian Navy (IN). Tejas is an amalgamation of contemporary concepts and technologies such as reduced static stability, fly-by-wire Flight control, advanced glass cockpit, integrated digital avionics systems and advanced composite materials for the airframe.

SPECIFICATIONS:
- Max Speed: Supersonic at all altitudes
- Service Ceiling: 50,000 ft
- "g" Limits: -4.0/-3.5

COMPANY: HINDUSTAN AERONAUTICS LIMITED
CONTACT: marketing@lca-india.com
INN 1510720472325

LIGHT COMBAT HELICOPTER (LCH)

DESCRIPTION:
Light Combat Helicopter (LCH) is a twin-engine, dedicated combat helicopter of 5.8 tonne class. This helicopter has a narrow fuselage and a tandem configuration for Pilot and Co-pilot, Weapon System Operator (WSO). It incorporates a number of stealth features such as reduced visual, aural, radar and infrared signatures and crashworthy features for better survivability.

The major features of LCH are:
- Glass Cockpit
- Crashworthy bottom structure
- Crashworthy fixed tricycle type with tail wheel landing gear
- Canard Pilot controls for low Radar Cross Section
- Integrated Dynamic System
- Hinge less Main Rotor / Bearingless Tail Rotor
- Anti-Resonance Isolation System
- Integrated Architecture and Display System (IADS)
- IR Suppressor
- Counter Measuring Dispensing System (CMDS)
- EO pod, Helmet Mounted Display System & EW suite
- 22 mm Gun, 70 mm Rocket & Missiles- Air to Air Missiles (ATAM) & Air to Ground Missiles (ATGM)

SPECIFICATIONS:
- MTOM: 5000 kg
- Max, speed: 284 kmph
- Range: 550 km
- Service Ceiling: 6.5 km
- Oblique climb rate: 62 m/s
- Power Plant: SHAR/41 engine (2 x)
- Power is 1212 kw

COMPANY: HINDUSTAN AERONAUTICS LIMITED
CONTACT: marketing@lca-india.com
INN 1520720471869
ADVANCED LIGHT HELICOPTOR (ALH) - DHRUVA

DESCRIPTION:
ALH Dhruv is a 5.5 tonne class category helicopter with side by side coaxial configuration, built to FAR 29 specifications. This helicopter is fully designed, developed and manufactured to meet the requirements of both, military and civil operations. Dhruv has gone through various upgrades to the present Dhruv MK IIIV configurations, powered by a Shakti Engine. The various roles of ALH are: Passenger / Commander Role, VIP Travel, Casualty Evacuation, Under Slung Load, Rapid Deployment of Forces, Logistic Air Support, Search and Rescue, Training.

SPECIFICATIONS:
- Length : 15.8 m
- Width : 13.2 m
- Height : 4.98 m
- Hingeless Main Rotor and Rotorless Tail Rotor
- Integrated Dynamic System (IDS)
- Anti-vibration Isolation System (AVIS)
- 4-Axis Digital Automatic Flight Control System (AFCS)
- Integrated Architectural Display System (IADS)

COMPANY: HINDUSTAN AERONAUTICS LIMITED
CONTACT: marketing@hal-india.com
NMM 152972035441 / 152972035442

CHEETAL

DESCRIPTION:
Cheetal Helicopter is a single-engine, multi-mission helicopter in 3-tonne class with a modern fuel efficient high performance engine, controlled by Fully Authority Digital Electronic Control (FADEC) System. It has automatic engine control by Electronic Backup Control (EBCR) system in the event of FADEC failure. Various roles of Cheetal are: Passenger transport, Casualty Evacuation (CASEVAC), Reconnaissance, Logistics Air Support, Search and Rescue (SAR), Underslung Load Operations.

SPECIFICATIONS:
- Length : 12.92 m
- Width : 7.38 m
- Height : 3.80 m
- MTOW : 1950 kg
- Cruise Speed : 252 km/h
- Range : 440 km
- Endurance : 3.50 hr
- No. of Passengers : 3 + 2

COMPANY: HINDUSTAN AERONAUTICS LIMITED
CONTACT: marketing@hal-india.com
NMM 1529720447409
**DORNIER (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 line services and air-traffic operations, coast guard duties and maritime surveillance. Do 228 can be deployed for various roles like:

- Maritime Surveillance
- Paramilitary Operations
- Troop Transport
- Aerial Survey
- Search and Rescue
- Commuter Transport
- Calibration of airport NAV-Com Aids

**COMPANY:** HINDUSTAN AERONAUTICS LIMITED

**CONTACT:** marketing@hal-india.com

**RSN:** 151072047790

**DESCRIPTION:**
- Remote Sensing Applications
- Casualty Evacuation
- Executive Transport
- Cargo & Logistics Support

**SPECIFICATIONS:**
- Wing span: 16.97 m
- Overall length: 36.56 m
- Overall height: 4.86 m
- PP seals: 19
- Engine Model: Garrett TPE 331-1A-252D
- Max. Take off Weight (Military role): 6450 kg
- Max. Cruise Speed: 428 knots
- Max. Take off Weight (Commuter role): 6200 kg
- Max. Range Speed: 393 knots
- Rate of climb: 9.7 m/s

**COMPANY:** INFOSYS

**CONTACT:** expert.ofb@hvc.in

**BRACE PARACHUTE FOR SU-30 A/C**

**DESCRIPTION:**
The brace parachute is intended to reduce the Aircraft landing run length or aborted landing.

**SPECIFICATIONS:**
- Basic material: Fabric nylon 93 gsm endowed conforming to spec. AR03/Pcacs/2001/53
- Canopy: Inviscid
- Dia of Canopy: 6850 mm

**COMPANY:** INFOSYS

**CONTACT:** expert.ofb@hvc.in

- Effective length of rigging lines: 6800 mm
- Length of connecting link: 4000 mm
- No. of rigging lines: 32
- Performance characteristics:
  - A/C Normal Landing Speed: 262 knots (12.2 m/s)
  - A/C Emergency Landing Speed: 300 knots (153.9 m/s)
  - Max. Operational load: 29400 N (2980 kgf)
  - Max. mass of parachute system: 28 kg
**SECURE VHF HANDHELD RADIO LVP 341**

**DESCRIPTION:**
LVP 341 is a VHF handheld radio with in-built high grade digital security 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 three types of antennas for use in different types of terrains and ranges.

**SPECIFICATIONS:**
- Frequency Range: 136 to 174 MHz
- Channel spacing: 25 or 12.5 kHz
- Type of operation: FM, Simplex
- Battery: Secondary / Primary Li-Ion
- Dimensions: 135 mm x 55 mm x 65 mm
- Weight: 810 gms

**COMPANY:** BHARAT ELECTRONICS LIMITED
**CONTACT:** indo@bel.co.in

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**SECURE UHF HANDHELD RADIO LUP 291**

**DESCRIPTION:**
LUP 291 is a VHF handheld radio with in-built high grade digital security 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:**
- Frequency Range: 136 to 174 MHz
- Channel spacing: 25 or 12.5 kHz
- Type of operation: FM, Simplex
- Battery: Primary Li-Ion / Secondary Ni-MH
- Dimensions: 121 mm x 80 mm x 65 mm
- Weight: 450 gms

**COMPANY:** BHARAT ELECTRONICS LIMITED
**CONTACT:** indo@bel.co.in

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**SOFTWARE DEFINED HANDHELD RADIO**

**DESCRIPTION:**
The radio is provided with high-grade crypto frequency hopping. It has in-built GPS with External Antenna.

**SPECIFICATIONS:**
- Dimensions: 137 mm x 55 mm x 63 mm
- Weight: 450 gms

**COMPANY:** BHARAT ELECTRONICS LIMITED
**CONTACT:** indo@bel.co.in

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**HF TRANSCEIVER LHP 265**

**DESCRIPTION:**
The LHP 265 is an advanced DSP based lightweight 20W HF SSB manpack radio. It provides a complete solution to the short-range communication requirements in the crowded HF band. It provides Voice, Data, Telemetry and Flash message transmission. Communication reliability is improved by means of Automatic link establishment (ALSE), which enables fine-time selection of optimum channel frequency. For reliable transmission of critical information under SE conditions, the radio provides secure transmission and anti-jamming protection by means of frequency hopping. The radio can be used with wide range of antennas, including a lightweight deployable wire for portable operations, dipole, long wire and many other antennas for static operation.

**SPECIFICATIONS:**
- Dimensions: 45 (W) x 22 (D) x 250 (H) mm
- Weight: 3.9 kg
- Frequency range: 1.5 to 30 MHz
- Power Consumption: 2500 Watts
- Antenna: 2-meter Antenna
- Battery: External Battery
- Dimensions: 45 (W) x 22 (D) x 250 (H) mm

**COMPANY:** BHARAT ELECTRONICS LIMITED
**CONTACT:** indo@bel.co.in
VHF FF TRANSCEIVER LVP 346

DESCRIPTION:
VHF FF Transceiver is a new generation of Fixed Frequency radio in the frequency band of 108MHz to 174.975MHz. It is a lightweight, compact design, high performance VOICE and DATA communication equipment for Manpack, Mobile and Static use. The design is based on the Digital Signal Processor (DSP), Direct Digital Frequency Synthesizer (DDFS) and high-end Micro controller (ARM). The radio works in fixed frequency mode with built-in high-grade digital memory. The radio has built-in GPS and is available in 50W and 25W/5W output. The radio is interoperable with the Handheld Radio in Fixed Frequency Clear and Secure modes for VOSCI Communication.

SPECIFICATIONS:
- Dimension : 87.5 mm X 222 mm X 150 mm
- Weight : 8.95 kg (max)
- Frequency Range : 30 MHz to 87.975 MHz with 25 KHz channel spacing
- Operating Temperature : -30°C to +55°C
- UP Voltage : 14.5 VDC typical (for 50W), 24.0 VDC typical
- 2525 channels with 100 preset channels

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

CB/LB FIELD TELEPHONE
PTR1000+

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

SPECIFICATIONS:
- All terrain four wheel drive vehicle
- Mobile 1G-WCDMA BTS, providing local coverage
- Km coverage with 18 M Electra Mechanical Mast
- Supports up to 15 simultaneous HSPA Users.

COMPANY: ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT: alphacorp@adtl.co.in

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 signalling
- Standard 4-wire, Push-To-Talk, Noise Cancelling Headset
- Adjustable levels for acoustical signal, including silent.

COMPANY: ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT: alphacorp@adtl.co.in
WEAPON SIGHTS FOR TARGET OBSERVATION & AIMING
COMMANDER’S SIGHT THERMAL IMAGER FOR BMP-II TANK (CSTI-BMP)

DESCRIPTION:
CSTI-BMP is an innovative combined device for the Commander of an armored vehicle or tank for day or night surveillance of targets, terrain and vehicles during battle situations.

SPECIFICATIONS:
- The sight channel is based on Thermal imaging principle and has a 3rd Generation detector.
- It is interchangeable with the previous TKN-18 form, fit and function without the need for any modifications to the vehicle.

COMPANY : ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT : alphaarsp@alphatec.in

MULTIBAND CELLULAR & BWA JAMMER

DESCRIPTION:
It is a Multiband Cellular & a portable multi-band RCED barrage sweep jammer covering cell phone bands and BWA band. The shielding frequency range covers almost all cell phone bands, including GSM, CDMA, DCS, IS and also the broadband wireless access (WBA) band, up to 2.5 GHz.

SPECIFICATIONS:
- Configurable bandwidth, configurable sweeps rate and configurable power level
- Effective shielding distance is 50-150m, depending on the signal strength.
- Weight - 3.8 kg
- Dimensions: 265 mm x 225 x 140 mm
- Frequency Range: 156 MHz to 174 MHz
- Bandwidth: 25 MHz
- No. of channels: 1520

COMPANY : ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT : alphaarsp@alphatec.in

VHF BASE STATION LVM 342

DESCRIPTION:
The Secure VHF Base station radio LVM 342 in 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 in microphone form and has a user friendly MM (Monitor Interface). It enables selective call operation between two radios or in a net of many radios.

SPECIFICATIONS:
- Weight: 3.8 kg
- Dimensions: 260 mm x 195 mm x 44 mm
- Frequency Range: 156.0 MHz to 174.0 MHz
- Channels: 1520
- Power Consumption: 15 W
- Battery: 12 VDC
- Operating Temperature: -20°C to +55°C
- Enclosure: MIL-STD-461C

COMPANY : BHARAT ELECTRONICS LIMITED
CONTACT : info@bel.co.in

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 ECM mode is instantaneous as Time Delay Burst (TDB) is maintained using highly stable clock.

SPECIFICATIONS:
- Dimension: 250 W x 100 H x 240 D (mm)
- Weight: 4.5 kg
- Frequency: 118-137 MHz and 260-270 MHz
- Channels: 1520
- Battery: 12 VDC
- Operating Temperature: -20°C to +55°C
- Enclosure: MIL-STD-461C

COMPANY : BHARAT ELECTRONICS LIMITED
CONTACT : info@bel.co.in

SOFTWARE DEFINED RADIO MANPACK (SDR)

DESCRIPTION:
SDR is a new generation compact V/UHF band radio designed to provide fast, reliable and secure IOK voice, data and video communications. It has high data rate of up to 1Mbps. It is power efficient, lightweight and suitable for manpack application.

SPECIFICATIONS:
- Dimension: 260 mm x 195 mm x 44 mm
- Weight: < 4.5 kg
- Frequency Band: 250 W x 100 H x 240 D (mm)
- Frequency Range: 118-137 MHz and 260-270 MHz
- Channels: 1520
- Battery: 12 VDC
- Operating Temperature: -20°C to +55°C
- Enclosure: MIL-STD-461C

COMPANY : BHARAT ELECTRONICS LIMITED
CONTACT : info@bel.co.in
COMBAT TRAINING CENTRE (CTC)

DESCRIPTION:
Combat Training Centre (CTC) is a one-stop training infrastructure solution for Defence, Security, Paramilitary and the Police forces. The secure facility, equipped with modern training equipment, infrastructure, free from routine interruptions and other disturbances, is designed to provide performance oriented training in realistic, tactical and operational environment. The CTC consists of simulators and live-training facilities to enable coordinated team training under various realistic threat scenarios. This centre can train people who are in the business of protecting various infrastructure, crowd management etc especially where the threat can come from any direction without warning. Combat Readiness Training, essentially starts with planning the training.

SPECIFICATIONS:
- Planning & Monitoring Suite
- The planning feature helps tailor the annual training plan, monthly/weekly schedule and the daily training programme for units and teams down to every single individual.
- Scribing & Measurement System
- Helps quantify all training at individual, team and unit level.
- Scenario Builder Tool
- Helps create most realistic and realistically opposed scenarios.
- Warehousing facility
  This not only helps train the decision makers and the leadership, but also fully integrated with Live Ranges, Tactical on Ground Training and also the Simulators.

TITANIUM ALLOYS

DESCRIPTION:
Titanium is known for its excellent creep resistance and high strength-to-weight ratio finds application in the aerospace, chemical, petrochemical, marine, paper pulp, textiles, food and dairy industries. Titanium alloy is also used for biomedical implants.

SPECIFICATIONS:
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<tr>
<th>GRADE</th>
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</table>

COMPANY: MISHRA BHATI NIGAM LIMITED (NWARHAN)
CONTACT: misharnigam@india.india

SPECIAL PURPOSE STEELS

DESCRIPTION:
These special steels have superior mechanical properties and better workability which are essential for special applications in pressurized, power generation, railways, defense, cranes and other general engineering industries. These include shipbuilding, high-strength metals, non-magnetic, austenitic and martensitic stainless steel and high performance engineering alloys.

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</table>

COMPANY: MISHRA BHATI NIGAM LIMITED (NWARHAN)
CONTACT: misharnigam@india.india

NON-PRESSURE BEARING PARTS OF SMALL ARMS

DESCRIPTION:
Components made by Metal Injection Moulding (MIM) are assembled in the following small arms:
- M594 of Caliber 5.56 mm, 0.223", 7.62 mm, 0.355", Pistols of Caliber 9 mm., 0.355", 0.357" Revolvers of Calibre 22 mag, 0.32" These are made using hardened steels such as MIM Fe-2% N, WIM 57, WIM 9100, WIM 4140, WIM 4145, etc.

SPECIFICATIONS:
- Parts made by Metal Injection Moulding (MIM) are assembled in the following small arms:
  - M594 of Caliber 5.56 mm, 0.223", 7.62 mm, 0.355", Pistols of Caliber 9 mm., 0.355", 0.357" Revolvers of Calibre 22 mag, 0.32"

COMPANY: Iden-MIM Pvt Ltd
CONTACT: info@iden-mim.com
## AIRFRAME STRUCTURES & ENGINEERED PRODUCTS

**DESCRIPTION:**
The company designs and builds highly engineered products, airframe structures for Aircraft.

**SPECIFICATIONS:**
- Cabins to house critical power and mission equipment for Boeing P-8 – Navy Reconnaissance Aircraft.
- Complex pylon and flight critical assemblies VFA-147 & F-147.
- Flap-Track Beam assemblies for Airbus A320 Family & A310 aircraft as Global Single Source.
- Major Airframe Assemblies for the Bell 407 Cabin as the Bell Helicopter.

**COMPANY** - DYNAMICS TECHNOLOGIES LIMITED  
**CONTACT** - ajay@dynamics.net

## SUB SYSTEMS

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<tr>
<th>PRODUCT</th>
<th>MANUFACTURING COMPANY</th>
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<tr>
<td>Oil-water separator</td>
<td>Varanam System Solutions</td>
<td><a href="mailto:varanam.sales@varanam.co.in">varanam.sales@varanam.co.in</a></td>
</tr>
<tr>
<td>Magnetic engine for dig sets</td>
<td>Kishorak Diesel Engines</td>
<td><a href="mailto:gurukripa.kishorak@gmail.com">gurukripa.kishorak@gmail.com</a></td>
</tr>
<tr>
<td>Landing gear system (LGS)</td>
<td>L&amp;T Naviara</td>
<td><a href="mailto:info@ltnaviara.com">info@ltnaviara.com</a></td>
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<tr>
<td>Helicopters control valves (HCV)</td>
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<td><a href="mailto:raneal@raneal.com">raneal@raneal.com</a></td>
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<tr>
<td>Steering drive</td>
<td>Krowa</td>
<td><a href="mailto:rajiv.k@krowa.com">rajiv.k@krowa.com</a></td>
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<tr>
<td>Propulsion control (PCU)</td>
<td>Flachk Frek</td>
<td><a href="mailto:sro@flachk.com">sro@flachk.com</a></td>
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<tr>
<td>Sheeting gear</td>
<td>L&amp;T</td>
<td><a href="mailto:info@ltnaviara.com">info@ltnaviara.com</a></td>
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<tr>
<td>Primary windscreen glazing</td>
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<td><a href="mailto:arikvickers@ltnaviara.com">arikvickers@ltnaviara.com</a></td>
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<td>Web Technologies</td>
<td><a href="mailto:sbr123@webtechnologies.com">sbr123@webtechnologies.com</a></td>
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