



# GLOBAL INDUSTRIAL & DEFENCE SOLUTIONS

(Product Range, Capabilities, Facilities)



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# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Introduction

Global Industrial & Defence Solutions (GIDS); An ISO 9001:2008 Certified Company feels pride being a premier defence company of Pakistan. The core objective of GIDS is to research, develop and market defence capabilities locally as well as internationally. GIDS represents a group of companies involved in research, development, delivery and support of leading edge industrial and defence system in the field of air, land and sea.

Our companies and their subsidiaries provide support and services solution for current and future defence, security, & information technology system. They design, develop and manufacture a wide range of electronic systems and subsystems for both military and commercial applications. They also design, develop, produce, and provide service support for armoured combat vehicles, artillery system and intelligent munitions.

Technology and innovation are the keystones of GIDS success and competitive edge. GIDS companies invest a huge amount in R & D activities making us the leading Pakistani investors in hi-tech sectors. We lay great emphasis on training and development of our human resource.

Laboratories of our companies are staffed with highly specialized researchers. Our organization is designed to deliver, capability and overall financial performance to meet customer's needs.

## Vision Statement

"To define and implement a total system of business activities for planning, promoting and distribution of satisfying products and services for target markets to achieve the organizational goals and objectives".

## Mission Statement

"Undertake aggressive marketing and export of defence and commercial products to make GIDS a profitable, commercially viable and dynamic corporate entity".

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Burraq UAV System



Burraq is a medium altitude high performance UAV System effective for Day / Night Surveillance and reconnaissance missions. With its superior capability and real-time data link range of 225 km, Burraq is battle proven and highly proficient to operate effectively in the hostile environments.

### Performance Characteristics

Configuration	Canard pusher
Take-off / launch	Automatic, Wheel take-off
Endurance	8.5 Hrs
Max operating altitude	16000 ft (Absolute Ceiling – 21,000 ft)
Data link range	200 Km (Real Time)
Cruise speed	180 - 220 km/h
Air vehicle length	5.41 m (17.75 ft)
Wing span	7.8 m (25.59 ft)
Gross T/O weight	650 kg
Payload weight	50 kg
Maximum power of engine	115 hp (914)
Guidance / Tracking	Autonomous, GPS Based (Manual Control Channel Available)
Power Plant	4 - Cylinder, 4 stroke piston engine
Landing / Recovery	Wheel Based Automatic Landing

### Main Features

- » Electro-Optical Payload (with Infra-red Imager, enhanced Day Imager, Laser Range Finder, Target Tracker & Geo-Referencing)

## UQAB-NG UAV System



Uqab-NG UAV is a catapult launched, net recovered Tactical UAV System designed to conduct reconnaissance & surveillance missions while offering long endurance, high service ceiling and optimized RCS Signature. It is a low weight and compact system ideal for real-time surveillance missions up to 150 km with 8 + hrs of endurance. The performance and capabilities of Uqab-NG makes it superior to any other conventional surveillance UAV. Uqab-NG has been precisely designed for the clients requiring an ultimate solution for their operational needs without any runway.

### Performance Characteristics

Configuration	Catapult launched (Net / Parachute recovery)
Endurance	8+ hrs
Maximum operating altitude	20,000 + ft
Data link range	150 km
Gross T / O weight	100 kg
Guidance / Tracking	Fully autonomous / Remotely Piloted
Communication system	Primary Link in C-Band and Backup Link in UHF
Wing span	6 m (19.685 ft)

### Main Features

- » Real time telemetry & HD video
- » Optimized RCS
- » Emergency recovery system through parachute
- » Dual redundant / fault tolerant FCC
- » Integrated modular LRU design
- » Primary and backup communication links
- » Frequency changing option during flight
- » Hybrid / Tri constellation navigation system
- » Modular design for transportation

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## Shahpar UAV System



Shahpar is a medium range tactical UAV System with autonomous take-off and landing. It can carry various types of payloads integrated for reconnaissance and day & night surveillance. Other features include accurate lateral, longitudinal trajectory control, mission planning, management & control, geo referencing & geo pointing for terrestrial targets.

### Performance Characteristics

Configuration	Canard pusher
Air vehicle length	4.2 m
Wing span	6.6 m (22 ft)
Gross T/O weight	550 kg
Payload weight	50 kg
Endurance	> 7 hrs
Max operating altitude	15000 ft
Cruise speed	150km / hr
Maximum power of engine	100hp
Data link range (real time)	250 km
Guidance / Tracking	Autonomous, GPS based (manual control channel available)
Power plant	Rotax 912 ULS (4 - Cylinder, 4 stroke piston)
Take-off / launch	Automatic, wheel take-off
Landing / recovery	Automatic landing, manual pilot and parachute option available

### Main Features

- › Autonomous take-off and landing
- › Various types of payloads integrated for reconnaissance and day & night surveillance
- › Accurate lateral and longitudinal trajectory control
- › Mission planning, management & control
- › Built-in data exploitation and dissemination
- › Full mission debriefing & simulation
- › Military standard hardware (Environmental standard 810F)
- › Geo referencing and geo pointing for terrestrial targets
- › MISB compliant video format

### Ground Control Station (GCS) for Uqab UAV

Ground Control Station is a truck mounted air-conditioned, insulated container which is equipped with standard, ruggedized consoles.



## UQAB UAV System



Uqab is a tactical UAV System which can be effectively used for battle damage assessment, aerial reconnaissance, artillery fire correction, joint forces operations, search and rescue missions, coastal area surveillance, route monitoring, internal security / mob control and flood relief operations etc. Presently the system is being used by Pakistani Security Forces.

### Performance Characteristics

Range	150 km
Endurance	4 hrs
Height ceiling	3,000 m
Speed	120 ~ 150 km/hr
Launch/recovery	Wheeled
Flight mode	Autopilot / RPV 1000 way points, Re-programmable during flight Fail-safe mode, Loiter mode & User denied holding patterns Tracking / Navigation GPS Based
Telemetry data	Real time digital video Position and health of UAV Geo-referencing
Payload weight/type	Gyro-stabilized gimbal with color day camera, thermal imager with target tracking and locking capabilities
Power plant	50 Hp (approx)

### Dimensions & Weight

Wing span	5.5 m
Length	4.0 m
Height	1.2 m
Max takeoff weight	200 kg (approx)

### Main Features

- › User friendly mission planning and execution
- › Mission de-briefing & simulation
- › In-flight mission re-programming
- › Flexible waypoints entry & editing during flight (direct from map & keypad)
- › Mission parameter & flight data logger for post flight analysis & simulation
- › Real time video and telemetry data
- › Moving map software
- › Geo-referencing
- › Easy payload (camera) controls
- › Separate consoles for mission commander, UAV pilot & payload operator
- › Easy to read displays and gauges
- › Standby control links (redundancy)
- › Back-up power supply

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Scout VTOL UAV System

Scout UAV system is a mini UAV system with Vertical Takeoff and Landing (VTOL) system having the hovering capability. It is a Quad-Copter configuration with four brushless electric motors. The high number of motors gives the UAV requisite thrust to carry a payload of up to 2 kg. Scout-VTOL Mini UAV's light weight and small size make it ideal for quick deployment and portability, giving users an extra edge. It is mainly used for the surveillance and reconnaissance in multiple terrain environments including across the hill monitoring situation. Low deployment time, easy carriage and mobility makes them the choice for local area commanders. Main application includes perimeter surveillance, route monitoring, search & rescue, battle damage assessment and event monitoring etc. In order to achieve maximum time over target hovering capability is considered necessary.

The 4 x Brushless Electric Motors used in Scout-VTOL Mini UAVs offer high reliability and low maintenance. They have very low acoustic and heat signatures. It uses Lithium Polymer batteries for power which cater for high current surges required to run an electric engine.

### Performance Characteristics

Diameter	2 m
Weight	6 kg
Radio range	5 km (LoS)
Operating radius	3 km (LoS)
Endurance	45 minutes
Ceiling	1200 ft
Power plant	Li polymer
Flight modes	Autonomous / semi autonomous / manual
Navigation	GPS based
Payload	EO sensor with 10 X Zoom. IR (un-cooled) sensor
Wing span	1.22m ( 4.0 ft)
Take-off/ landing	Vertical take-off
GCS	Portable, weighing less than 5 kg, real time video with GPS overlay, real time UAV position tracking on moving map, video recording, snapshots and mission play back

### Main Features

- › Hovering capability gives additional time over target
- › Only two men operational crew
- › GPS based navigation and height lock
- › Day or night video surveillance
- › Option of target locking and geo-referencing
- › Real time surveillance video
- › 2-axis gyro-stabilized gimbal support
- › Fail safe: Auto return to home
- › Voltage monitoring / protection
- › Intelligent orientation control (IOC)
- › Point of interest function
- › 1 key go home
- › Motor fail protection



### Flight Performance

Hovering accuracy	Vertical $\pm 0.5$ m ;	Horizontal $\pm 1.5$ m
Max. wind resistance	< 8 m / s	
Max yaw angular velocity	150 deg / sec	
Max tilt angle	350	
Ascent / descent	$\pm 6$ m / s	

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Range Extension Kit (REK)



REK converts the General Purpose Steel Bombs to guided weapons by simply integrating the Range Extension Kit. The kit includes a Tail Unit integrated with the bomb body that provides both guidance and navigation to the target, and an additional Wing Unit (with deployable wings) for extending the range.

### Characteristics Specifications

Range (km)	100
Launch speed (Mach)	0.6 - 0.8
Launch altitude (m)	≤ 9000
Weight with 250Kg GP bomb (kg)	< 300
Interface	RS 422 / Mil-Std-1760
Accuracy (with GPS)	< 10 m CEP
Flight time	~ 5 min

### Main Features

- › Autonomous guidance by means of an onboard AHRS system aided by a Global Positioning System (GPS) processor
- › All weather weapon
- › Capable to accept precise targeting information in the form of world geodetic survey (WGS)-84 coordinates provided either during mission planning or in flight
- › Environmental test methods as per MIL STD 810F
- › Specification Practices as per MIL STD 490A
- › Defense system software development as per MIL STD 498
- › Control of EMI as per MIL STD 461D

## ZUMR - 1 (EP) Day And Night Surveillance Payload



### Missions

- › Day and night surveillance of site (Offshore platforms, industrial and sensitive sites)
- › Border surveillance
- › Homeland security
- › Search and rescue (or sea vehicles)
- › Tracking (Persons or Land)
- › Tactical support
- › Aerial imagery

### Technical Characteristics

- › 4 axis system having 2 axis active gyro- stabilization
- › Azimuth 360o continuous
- › Elevation 10o to -110o
- › 30 kg
- › 380 mm (15")

### Sensors Configurations

- Enhanced Day Imager (continuous zoom)
- › Resolution 540 TVL
- › Field of View:
  - Wide 35.5o
  - Narrow 0.9o
- › Zoom 40X (Optical)
- Thermal Imager
- › Resolution 640 X 512 FPA
- › Field of View:
  - Wide 24o
  - Medium-Wide 5.0o
  - Narrow 1.2o
  - Super-Narrow 0.6o (E-ZOOM)
- Laser range finder
- › Range 20m-20 km
- › Accuracy 5m
- › Measuring rate 10 ranges / min

### Power Requirements

- › Voltage 24-32 VDC
- › Consumption 400 w (600 w max)

## GP Series Bombs

### Options

- › System coupling:
  - GPS (Global positioning system)
  - IMU (Inertial measurement unit)
- › Geo-pointing and geo-locations

### Environmental

- › MIL-STD-810F
- › MIL-STD-461E

### Platforms

- › UAVS • Aircrafts • Helicopters
- › Maritime • Ground Based Vehicles

### Main Features

- › High performance multispectral Imaging
- › 24/7 mission capability with enhanced imagers
- › Low weight and small size
- › Highly stabilized system
- › 3 LRUs (Line replaceable units)

### General Purpose Steel Bombs

- › Effective against all kinds of ground targets
- › Low drag design with high length-to-diameter ratio
- › Forged from seamless steel tube
- › Filled with compo 'B' explosive
- › Can be carried on NATO / WARSAW standard suspension system



### Pre-Fragmented Bombs

- › New concept in optimizing the effectiveness of conventional bombs
- › Outer casing manufactured from composite fiber
- › Contains spherical steel balls which shoot out in all directions when the blast occurs
- › 5 to 6 times more effective than GP series steel bombs
- › Can be carried on NATO/WARSAW standard suspension systems

### Incendiary Pre-Fragmented Bombs

A combination of steel balls and especially developed incendiary metal alloy is used to effectively create incendiary effect.

### CTU Conical Tail Unit

- › Consists of an elongated cone assembled with four fins
- › Stabilizes the flight and creates low drag configuration of the bomb
- › Can be fitted with GP series steel and Pre-Fragmented bombs

### CTU Conical Tail Unit

- › Consists of a shock absorbing tube and four extendable drag fins
- › Especially designed to provide adequate safe distance between bomb and delivery aircraft during low level attack
- › Creates low drag configuration for the bomb when in closed position and a high drag configuration when in open position



# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## AB- Series; Electronic, Impact & Proximity Fuzes

## Sea Surge Anti Submarine Weapon



Fuzes play a key role in optimizing the performance of air and ground burst bombs. GIDS is one of the few companies in the world that has complete command over the technology for electronic fuzes. GIDS has successfully developed the following fuzes :

### Impact Fuzes

- AB-100 (For low drag bombs)
- AB-105 (For low / high drag bombs)
- » Provide instantaneous firing pulse on impact, thus ensuring true surface detonation
- » High performance electronic fuzes replacement for M-904
- » Fuze or equivalent mechanical fuzes
- » Includes E.F.I capability for interface to Russian aircraft pylons.

### Proximity Fuzes

- AB-103 (For low drag bombs)
- AB-104(For low / high drag bombs)
- » Optimizes the performance of air-burst bombs
- » Allow a 2-12 meters above ground level burst of the bomb for all types of targets, approach angles and closing velocities
- » Have an impact detonation backup system
- » Smoke or dust on the terrain does not interfere with the proximity function.
- » Includes E.F.I capability for interface to Russian aircraft pylons.

### Multi-Role Fuze AL-788

- » AL-788 is a versatile Nose Fuze that offers Proximity and impact detonation modes both in high & low drag modes
- » Incorporates all the features of AB -100, AB-103, AB-104 & AB -105 fuzes



Sea Surge air launched anti submarine weapon can be deployed at shallow depths from either a fixed wing aircraft or a helicopter. This weapon is ideally suited for coastal defence operations.

### Technical Specifications

Total length	142 cm
Dia	28 cm
Weight of full prepared unit	150 kg
HE	82 kg
Firing depth	21 meter

### System Configuration

- » Main body carrying HE
- » Fuze
- » Tail unit
- » Suspension and releasing mechanism

## Infrared Flares

Aircraft counter measure for decoying heat seeking missiles. These IR Flares are compatible with both NATO & Warsaw standard aircraft.

	CMF 1	CMF 2
Aircraft	NATO	Chinese
Dispensers	ALE 29 A, ALE 39, ALE 47	GT-1, GT-1P
Firing Requirement	05 A pulse for 50 ms	0.7 A pulse for 35 ms
Burning Time	> 4 Sec	> 4 Sec

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Chaff & Flare Dispenser System (MOHAFIZ)

- › Chaff & Flare dispenser system (Mohafiz) is an electromagnetic (RF) and Infrared (IR) countermeasure self-protection dispensing system for airborne objects
- › Chaff gives protection against Radar Guided Missile and Flare protects against infrared guided missiles
- › When this system is integrated with radar warning receiver (RWR) and missile approach warning system (MAWS), the Mohafiz CFD system is effective in multiple threat environments



## Automatic Fire Control System (Up-Gradation Of 37mm Anti Aircraft Gun)

The original 37mm twin barrel AD gun has been upgraded in order to meet the present combat threats. The upgraded gun with its new firing system gives a unique combination of modern technology resulting in a very reliable weapon system. Capable to track high speed targets coupled with auto ranging. The gun can be operated in three modes, i.e. joystick, handheld fire control and laser aiming sight.

- › Sunlight viewable alpha numeric displays
- › Provision of interfacing with multiple guns (optional)
- › Off Gun tracking of target for stability
- › Computer aided leveling
- › Smart electronics for gun control
- › Power electronics for motors
- › Limit switch for safety arc range
- › Emergency stop
- › Motors for azimuthal & elevation movements
- › Horizontal and vertical shaft encoder
- › Fire safety switch



## Baktar Shikan (Anti-Tank Guided Missile Weapon System)



Baktar Shikan is an anti-tank missile weapon system which pursues the principle of optical aiming, IR tracking, remotely controlled and wire transmitted guidance signals. The system can quickly be dis-assembled into the following four sub-units, encased missile, tripod, goniometer and control box each weighing not more than 25kg thus making the system man-portable. It can also be mounted on Cobra attack helicopters and Armored Personnel Carriers (APCs). Its long range, penetration power and a powerful anti-jamming capability form a potent. Baktar Shikan family of missiles is in service for more than two decades and is a battle tested weapon held with different armies worldwide.

### Technical Specifications

Propulsion	Solid
Range	3,000 m
Hit probability	>90 %
Penetration	750 mm behind ERA
Speed	220 m/s
Calibre	120 mm 11.7 kg
Weight	11.7 kg
Length	1135 mm
Rate of fire	2-3 missiles per min
Crew	3 Persons

### Salient Features

- › Day & night firing
- › Anti-ERA capability
- › Long range
- › Quick reaction time
- › High hit probability
- › Greater penetration
- › Rapid rate of fire
- › Anti-jamming capability
- › Easy operation & maintenance

## Nigehbaan Day / Night Surveillance System



Nigehbaan surveillance system is used for day and night forward observation, target acquisition and border monitoring. It has the capability to determine the range of required targets.

- › Reliable, continuous day / night surveillance
- › Multi sensor head for target's image, range and position
- › Motorized pan / tilt for precise remote control
- › Comprehensive interface for reliable data communication
- › Full function remote control

### Night Observation Device (NOD)

NOD is a portable, long range multi-sensor system for target acquisition, border patrol and perimeter security. The NOD system comprises of digital magnetic compass, GPS, pan and tilt unit.

- › Area surveillance
- › Target acquisition
- › Search and rescue
- › Forward observation
- › Perimeter security
- › Border patrol



## Laser Systems

## Laser Threat Sensor (LTS)



### Laser Range Finder (AR-4)

The AR-4 Laser Range Finder is a compact reliable instrument for measurement of target distance and correction of gun fire. The system range is up to 10 Km with an accuracy of  $\pm 5$ m. It is operated hand-held but can be quickly clamped to a goniometer for artillery use.

- › Compact design
- › High performance
- › Fully integrated stand alone design principle
- › Environmental performance to MIL-STD-810F
- › Extensive on board BIT facilities

### Laser Range Finder (LRH 786Q)

LRH 786Q is a light weight, rugged, compact size, simple to operate and versatile for both static and moving targets on land, air and sea. Besides, it can simultaneously range multiple targets i.e. can range and store four targets in its internal memory in one ranging operation. These ranges can be displayed one by one when desired.

- › Range up to 4 targets with a possibility of 5th target detection
- › Range targets from 150 meters to 20,000 meters
- › Accuracy  $\pm 5$  meter
- › Gate ranging 500 to 5000 meters

### LDR Laser Designator & Ranger

LDR-4 is a light weight high performance laser based system which acquires target coordinates by measuring RANGE, ELEVATION ANGLE and AZIMUTH ANGLE to the target with respect to LDR 4. System designates a target for laser-guided weapon homing on to the laser spot. It is also compatible with NATO and WARSAW laser-guided weapons.

- › Multi configuration
- › Light weight
- › Compact
- › Rugged



LTS786P is an early warning device which gives audio and visual alarms of threat by sensing a laser beam aimed at it from any direction. The exact location of the threat is indicated by nine LEDs and has the capability to differentiate between a Laser Range Finder, Laser Target Designator or a Laser Target Tracker Signals. It can be used on stationary or moving objects of any size or shape.

- › Wave length response 0.8 ~1.06 microns
- › Can be fitted on tanks, bridges and installations

LTS 1 can be coupled with acoustic alarms, smoke generators and other counter-measures.

### Digital Goniometer (DGM)

The Digital Goniometer (DGM-1) is used with Laser Range Finder to precisely measure the coordinates of the target. It can be interfaced to any aiming device through a dovetail. Interface for mounting on tripod is provided by TPI 11 and diameter of 5/8 inch.

- › Digital display
- › Azimuthal 1Mil (360 deg) elevation 1 Mil
- › Weight : 4.2 kg
- › Measuring accuracy

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Military Batteries

We design, develop and manufacture customized batteries and power sources for military use. The batteries are rigorously tested and produced by ISO 9001:2000 certified facilities, maintaining the most stringent international quality control standards. We produce more than 30 different types of batteries.



### Nickle Cadmium Cells / Batteries

Nickel Cadmium Batteries have a rugged construction and proven reliability. Characteristics like high power capabilities, a wide operating temperature range, long life cycle and resistance to maltreatment makes them suitable for many applications.



### Lithium Thionyl Chloride Batteries

Lithium Thionyl batteries have highest cell voltage and energy densities. The cells have been fabricated in variety of sizes, designs and configurations to meet particular requirements.



### Zinc Silver Oxide Batteries

These batteries have numerous applications particularly where high energy density batteries are used such as power sources for tactical missiles, torpedoes, GPS and various military communication and electronic equipment with excellent performance in range of 10 C0 to + 50 C0.



### Uses:

These batteries are used in various types of fixed wing and rotary aircrafts.

- Naval vessels
- Communication equipment
- Missiles
- Torpedoes, etc

## Mobile Field Kitchen (MFK)



It is built on two wheeled trailer, strong enough to sustain cross country tow-ability by a 2.5 ton vehicle. It can cook multiple food items etc for 150 persons. It is equipped with multi fuel burner with proper exhaust system and corrosion free utensils. It can function in all weather and terrain conditions. MFK can be used for Army, Police, and Marines.

### Main Features

- › Multi-fuel burner with proper exhaust system
- › Accessories & utensils are non injurious to human health
- › Functions in all weather & terrain conditions
- › Rust and corrosion free
- › Adopts external power source, when required
- › Accessories & utensils are firmly secured for no noise or rattling effect

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Vehicle Mounted Kitchen (VMK)



GIDS has indigenously designed and developed a Vehicle Mounted Kitchen for use in the field area to facilitate quick and hygienic cooking for troops. The kitchen has been successfully inducted in Pakistan Army and is mounted on a 4 x 4 vehicle with good cross country mobility. It is a complete and compact unit which has been equipped with the modern equipment to fulfill all basic cooking requirements in the field.

### Main Features

- › Quick and hygienic cooking
- › Storage of ration, water and requisite fuel
- › Integral electric power supply
- › Hot and cold water
- › Carries three days ration for 150 persons
- › Cooks meals for 150 persons in approximately two hours
- › Stores 1000 liters of water in overhead water tank
- › Uses both internal (14KVA Generator Set) and external electric power source.
- › Only 15 minutes required to setup the kitchen
- › Easy relocation as per the operation requirements
- › Hygienic food can be laid on the service counter for consumption on self service basis
- › Appropriate quantity of utensils, crockery and cutlery available
- › It has got an appropriate arrangement for washing of utensils

## RIBAT ESM System

Electronic Support Measures (ESM) system is the most important aspect of Electronic Warfare (EW), required for a variety of ground, surface and airborne applications, especially in maritime scenario. It is imperative for every surface naval platform to be equipped with ESM system for early detection and parameters measurement of friendly & hostile emitters.

- › 100 percent intercept probability
- › Wide operating frequency range
- › High sensitivity & dynamic range
- › Instantaneous frequency measurement
- › High frequency accuracy & resolution
- › 360 degree spatial coverage
- › Fast reaction time
- › Threat identification
- › Mission library
- › Scan & pulse measurement analysis
- › High resolution display
- › Audio/visual threat alarm

## Thermal Imager For Medium Range Arm (TISA-3M)



TISA-3M is medium range thermal imager for small arms comprised of 640x480 microbolometer FPA Detector. It has integrated OLED display with diopter adjustments and video output for LCD display.

### Technical Data

- |                         |                                 |
|-------------------------|---------------------------------|
| › Sensor type           | Un-cooled micro-bolometer       |
| › Sensor size           | 640 x 480, 17um                 |
| › Spectral response     | 8-14 um                         |
| › Electronic zoom       | 1x, 2x, 4x                      |
| › Field of view         | 10.5° x 8° (1x)                 |
| › Focus type            | Fixed (Athermalized)            |
| › Focusing range        | 5m - Infinity                   |
| › Polarity              | White/ black/ fire/ sepia/ iron |
| › Video output          | PAL                             |
| › View finder display   | OLED display ( 800x600)         |
| › Battery type          | 4 x 3.7V Li ion                 |
| › Battery life          | 4 hrs                           |
| › Operating temperature | -30°C to 60° C                  |
| › Weight (w/o battery)  | 0.9 kg                          |
| › Conformance           | MIL-STD-810G                    |

### Applications

- › Area surveillance
- › Perimeter security
- › Forward observation
- › Boarder patrol
- › Target acquisition
- › Handheld or gun mounted



# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Thermal Imager For Medium Range Arm (TISA-3S)



TISA-3S is short range thermal imager for small arms comprised of 384 x 288 microbolometer FPA Detector. It has integrated OLED display with diopter adjustments and video output for LCD display.

### Technical Data

› Sensor type	Un-cooled micro-bolometer
› Sensor size	384 x 288, 17um
› Spectral response	8-14 μm
› Electronic zoom	2x
› Field of view	28° x 21° (w/o zoom)
› Focus type	Fixed
› Focusing range	3m - infinity
› Polarity	White/ black hot
› Video output	PAL
› View finder display	OLED display ( 800x600)
› Battery type	4 x 3.7V Li ion
› Battery life	> 4 hrs
› Operating temperature	-30°C to 60° C
› Weight (w/o battery)	0.8 kg
› Conformance	MIL-STD-810G

### Applications

- › Area Surveillance
- › Perimeter Security
- › Forward Observation
- › Boarder Patrol
- › Target Acquisition
- › Handheld or Gun mounted

## SLTA (Slim Line Towed Array Sonar For Naval Applications)



Detection of targets by the naval ships and submarines has always been very difficult and challenging due to the peculiar sea and associated environmental conditions. However the radiated noise from own platform makes it difficult or at times even impossible to detect weak signals from silent or remote targets. The successful design and development of the SLTA has significantly enhanced the underwater detection capability of the naval platforms.

### Future Applications

- › SLTA for submarines & ships in passive mode
- › Coastal defence system
- › SLTA for surface ship applications consist of
- › Active towed array sonar
- › Stand alone passive array
- › Divers, detection/ Offshore harbour defence systems
- › Geophysical exploration applications
- › Seismic surveys etc

### Main Features

- › Equally adaptable for surface ships or submarines
- › Enhanced detection and classification due to longer array having wide acoustic aperture, reduced low noise and efficient processing
- › Smaller diameter for easier handling onboard to facilitate its deployment and retrieval during all weather and covert operations

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Naval Simulator

### Bridge Pilotage Simulator (BPS)

Bridge Pilotage Simulator (BPS) is developed for training of bridge-crew in navigation and other operational tasks. The simulator displays one large synchronised scene replicating the view from the bridge of a surface ship and provides life-like training in real time scenario to naval personnel on navigation, watch keeping and other specific bridge and sea operations.

### ASTT Action Speed Tactical

ASTT is a real time Simulator that provides tactical training to Naval Officers and men in surface, subsurface and air operations. Based on state of the art development techniques the simulator ensures generation and execution of multidimensional game scenarios in the most realistic sea environments.

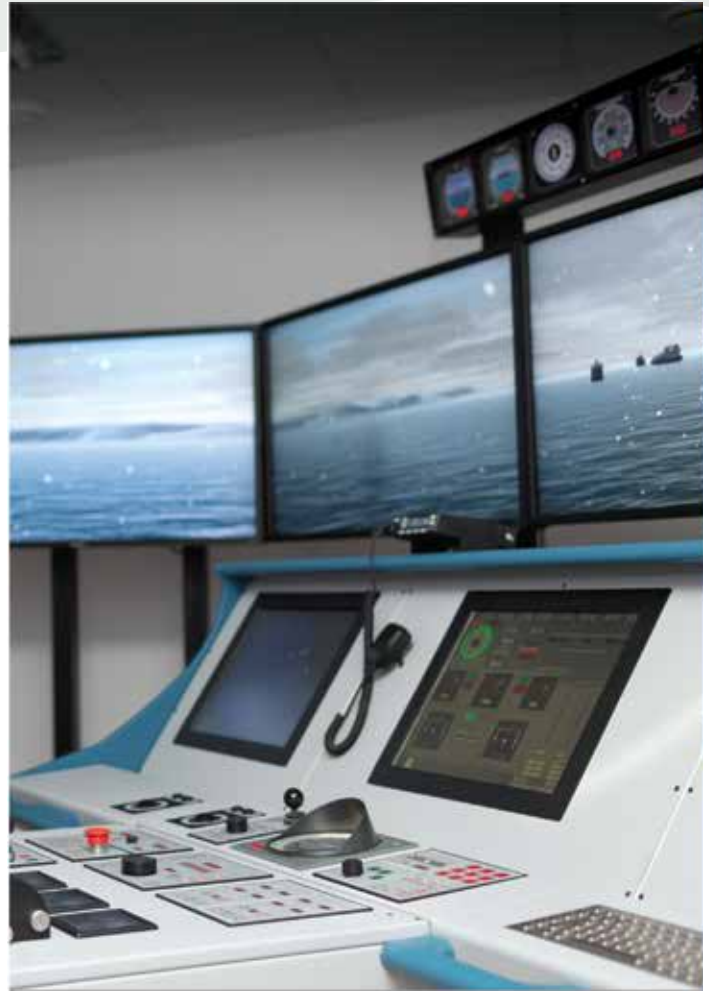
### Capabilities and Main Features

- › State of the art navigation simulator
- › Can replicates bridge of any naval or merchant vessel
- › Controlled with ships replica consoles
- › Wide angle view as desired by the customer
- › Picture display of all types of radars
- › Provision of 3D sounds
- › Navigational exercises with complete bridge team
- › Implementation of physics engine for real time platform motions
- › Environmental effects

### Capabilities and Main Features

ASTT replicates the principal components of the naval fleet. It includes all tactical facilities like:

- › Tactical manoeuvres
- › Complete fleet operations
- › Planning and management of war scenario
- › C3I command centre
- › Scenario generation
- › Exercise monitoring
- › Trainees evaluation



# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Naval Vessel OPS Room Simulator

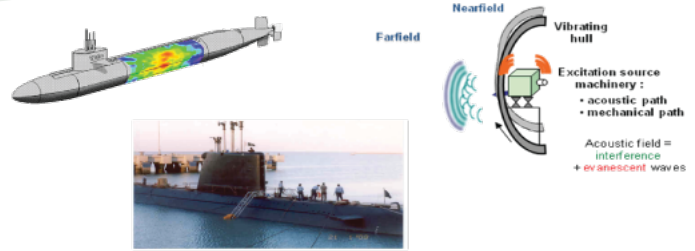


Tactical training of Operations Room crew onboard naval ships is a paramount requirement of modern naval warfare. For this purpose sending of naval units at sea for longer durations is an expensive proposition. On the other hand the Ops Room Simulator provides continuous training to ships crew as convenient while remaining ashore. The system can provide integrated picture of different types of weapons and sensors and create battle scenario as per customer's requirements.

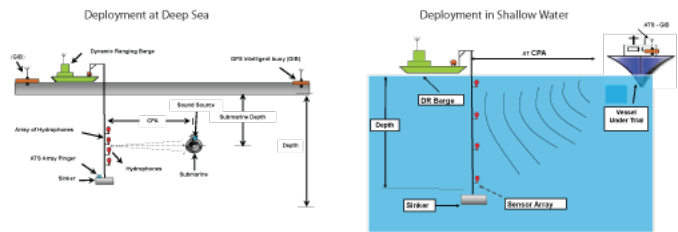
### Capabilities and Main Features

- › Provides tactical training for OPS room team
- › Includes state of the art replica consoles of weapons and sensors as desired by the customer
- › Generic library structure
- › Simulation of fire control system, sensors, weapons etc.
- › Record/ replay feature
- › Modular & configurable architecture to meet customized needs
- › Through life support is ensured

## Acoustic Ranging Of Naval Vessels



### Dynamic Ranging



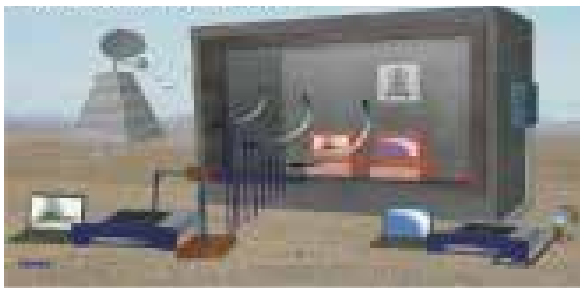
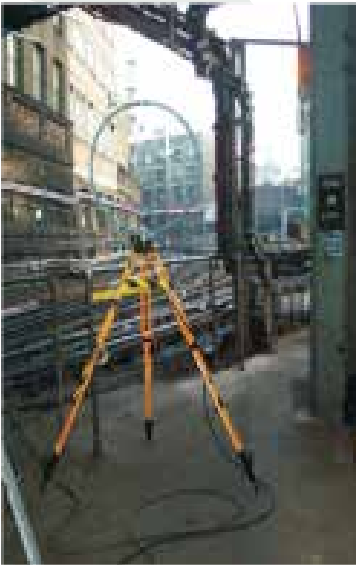
In today's naval warfare, knowledge of one's own acoustic signatures is the difference between the prey and the predator. Signature management facility provides own noise level in full range of audible frequency spectrum, by utilizing static and dynamic measurements of naval vessels i.e. ships, Mine Counter Measure Vessels (MCMVs) and submarines.

Acoustic Signature Management is a very specialized field which not only requires operational skills but also has a very strong pro cient development and analytical aptitude. We can provide the said service to friendly navies in the region. It consists of Static Ranging known as Near Field Holography (NAH) and dynamic ranging of moving vessels in open sea.

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Services



### Measurement & Testing Services

We design and install Electromagnetic Shielding for military, industry, medical facilities, hospitals and R&D laboratories. We offer a wide range of Electromagnetic Compatibility (EMC) services e.g. EMC testing of ships, submarines, other tactical platforms and electronic systems.

### Designing of Small to Medium Size Surface Vessel

We have the capability to undertake the design of small to medium size surface vessel including missile boats, small merchant ships and coastal crafts etc. We have design labs that are equipped with latest ship design software like paramarine that enable following analysis to be undertaken:

- › Stability analysis
- › Powering calculations
- › Sea keeping analysis
- › Manoeuvring analysis
- › Detailed structural design
- › Radar cross section analysis
- › Vulnerability analysis etc.

## Integrated Command & Control System



Command, Control, Communications, Computer & intelligence (C4I) is a concept whereby all the defence entities of a country share, jointly process, and fuse data to establish real time Common Operational Picture (COP). The COP consists of Recognized Air Picture (RAP), Recognized Maritime Picture (RMP), and Recognized Ground Picture (RGP). COP, along with associated operational data, provides the supreme commander with a clear status of country's war fighting potential for the ease of decision-making during fog of war. C4I system forms a self-healing self-forming intelligent network that permits upward, downward, and lateral flow of information to bring all tiers of command at the same level of situational awareness. GIDS Integrated Command & Control System includes all the critical components for ground, air, and naval forces, including:

1. Common Operational Picture (2D and 3D)
  - Detection
  - Tracking
  - Identification
2. Asset Management & Tracking System
3. Intelligence Management System
4. Meteorological Management System
5. Mission Planning System
6. Threat Evaluation & Weapons Assignment System (TEWA)
7. War-gaming, Simulation, and Training System
8. Voice Switching System
9. Role Based Access Control System
10. Digital Audio & Video Recording System
11. Data Security & Encryption System

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Rabta C4I & Air Defence Automation System

- › Interfering the presence of valid targets form a series of plots and tracks received from different radars
- › Calculating true trajectories of the target in presence of uncertainties imposed by the sensor as well as aircraft dynamics
- › Recognizing and rejecting false targets
- › Successfully tracking and predicting the optimal estimates of the target in the presence of clutter and false alarms
- › Display target tracking information
- › Forming correct association between tracks and observation from radars in different environments
- › Successfully tracking the target during extreme condition of fast maneuver, formations, miss detection, cross-over etc

## ACMI System Air Combat Maneuvering Instrumentation System



The ACMI system is designed to be range-less and can be operated without any restriction in any area. The system records the "Time Space Position Information" (TSPI) of all the aircrafts involved in the training exercises along with their essential parameters onto removable data storage.

- › An effective training tool for combat pilots
- › Capture of weapon deployment events
- › Exchange of data between the participating aircraft using realtime data link
- › Notification to pilots of weapon event result such as hit and miss for real time kill removal functionality
- › Real time warning to the pilots such as collision kill/miss etc
- › Recording of time synchronized relevant information for post mission debriefing/replay like
- › Chaff & Flare Dispenser, RWR, EW etc
- › Post Launch Missile fly out and bombing accuracy calculations
- › The system is installed on Mirage / F-7P / F-16 aircraft

## PAKFIRE Artillery Fire Control System



PAKFIRE is a modular, reliable, secure, user friendly and fully integrated Artillery Fire Control System that automates all operational functions of artillery and ensures fast and accurate fire on targets. It provides an automated solution for Preparation, Coordination, Dissemination, Execution and Modification of Fire Support Plan, Fire Plan and Gun Programs. It has a scalable system architecture that is suitable for present combat scenarios and can be deployed at all combat echelons. PAKFIRE interfaces with all types of external systems, like radars, meteorological systems, UAVs and Command and Control through wired/wireless media.

### Operational Features

- › Facilities Observer in identification/acquisition of targets and passage of fire orders
- › Handles all artillery procedures and functions
- › Computers accurate ballistic data for all types of ammunition
- › Incorporates scanned, vector imagery and 3D terrain maps
- › Available for battery, regiment, divisional and up to operational level configuration
- › Advanced level of networking features to ensure continuous connectivity
- › Ruggedized hardware to work in harsh environmental conditions based on military specifications



# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Major Modules

**Artillery Fire Direction Module** receives target information from Forward Observers, Counter Bombardment and Fire Support Organizations. The data of met system and non standard conditions is then added to calculate fast and accurate firing data which is then transmitted to guns and digital message units using wired or wireless media.

**Fire Support Planning Module** is designed to integrate fire support with the maneuver plan. It assists in the preparation, coordination, dissemination, execution and modification of Fire Support Plan (FSP). All types of GIS functionalities like map navigation, drawing of tactical and military symbols, preparation of operational overlays etc have been incorporated.

**Counter Bombardment Module** integrates external sensors like Radars, UAVs etc with PAKFIRE for speedy transfer of information. It assists commanders and staff in employment of Locating Resources by providing Software Aids/Tools. It shows various charts, plots, HB List and CB Task Table generated automatically by the system.

**Supporting Functions Module** enables commanders in allocation, modification and management of resources like ammunition, weapons, vehicles and manpower.

## PAKSIM Artillery Forward Observer Simulator

**PAKSIM**, Artillery Forward Observer Simulator (AFOS) is desktop application that provides training for the forward artillery observer in near-real environment in a classroom/simulation lab using indoor realistic scenarios.

**PAKSIM** also incorporates ballistic calculator to cater for various artillery shoots according to their respective calibre. This system also has the capability to place 3D models according to their actual scale with respect to terrain and utilizing complete physics like mass, gravity and dimensions of that particular model.



## Operational Features

- › Provides comprehensive training for Observation Post
- › Allows simulations applications of multiple environmental effects
- › Displays fall of a shot as in actual
- › Contains adequate land marks/reference points for target indication
- › Produces numerous blast effects of artillery shells
- › Sound simulation is realistic
- › Provides various types of targets
- › Guides fire planning
- › Can train trainers as well

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## NBC Defence & IPE

### Nuclear Biological & Chemical Defence Suit

The NBC defence suit provides physical protection against CBW Agents for 24 hours. It provides protection against direct contact with and contamination by radioactive, biological and chemical substances. It is generally designed to be worn over extended periods to allow the wearer to fight while under threat or under actual NBI attack.



*NBC Gloves*



*NBC Over Boots*



*NBC Water Bottle*



*CWA Detection Kit*



*NBC Haver Sack*



*Decontamination Kit*



*Radiac Calculator*



*NBC Air Filter*



*Detector Paper*

## Heads High Efficiency Advanced Decontamination System

- » Used for decontamination / detoxification of vehicles, gears, buildings, equipment, terrain and personnel against CBW agents
- » The equipment consist of high pressure pump and heating system and is capable to spray hot / cold water, steam and decontamination solution over the contaminated area
- » Easy transportation & moveable



## Water Purification Plants

Water purification systems are used to purify all types of contaminated water from various sources. We have developed BRACKISH as well as SEA WATER purification systems having different capacities which produce water quality as per WHO standards. Brackish water purification systems include WPP – D650 (capacity – 650 liter/hr, Raw water input – TDS upto 3500 mg/liter) & WPP – D2500 (capacity – 2500 liter/hr, Raw water input – TDS upto 3500 mg/liter) and NAVY vessels model include Dual Stage Reverse Osmosis plant ( Stage 1 & 2 capacity – 800 liter/hr, raw water input – TDS upto 40,000 mg/liter, stage 1 product water quality – less than 1000 mg/liter & stage 2 water quality less than 2 mg/liter).

- › Easy maintenance & fully automatic
- › Latest & state-of-the-art Ultra Violet system for removal of harmful bacteria and viruses
- › Integrated dispensing system automatically adds Chlorine to prevent re-growth of bacteria in water
- › Setting up and operation of the system in 10 min by just one person
- › System can be easily transported on various platforms like rail, ship, trailer aircraft and helicopter
- › Back-washing of reverse osmosis through CIP system
- › Diesel generator provides the system with electricity



## Security & Riot Protection Equipment

### Ballistic Helmet

GIDS's Ballistic Helmet protects the user from bullets, fragments and provides wearing comfort due to balanced weight distribution which does not impede the performance of the user. The construction of inner suspension system ensures that a gap is always present between the head and shell which minimizes the effect of blunt trauma experienced by the user. It includes an adjustable headband and a comfortable chinstrap assembly. The helmet is relatively lightweight and provides maximum comfort, mobility & protection in its class.

### Models of Ballistic Helmet

- › BH A140 1.36 Kg
- › BH A150 1.50 Kg
- › SBH 400 1.60 Kg (Magnum Resistant)



### Metallic Mine Detector

A highly sensitive metal detector for effective detection of anti-personnel and anti-tank mines.



### Explosive Detector

Hand Held and Long Handle Detector used for detection of explosive materials. Operates on principle of Ion Mobility spectrometry technique. Detects vapours coming out of explosives and produces signals in the form of light by LED and sound by buzzer. Rechargeable low voltage alarm battery.



# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Security & Riot Protection Equipment

### Stun Grenade

A device to produce high intensity illumination and loud bang which causes temporary disorientation and incapacitation of persons. It is non lethal and does not contain explosive material. No fragments are produced after initiation. Available in single bang and six bang versions.

Singal Bang

Illumination intensity	1.3-1.5 Mcp
Sound intensity	170-180 dbs (approx)
Delay time	1.5-2 Second
Total weight	230 g (approx)
Diameter	51.50mm
Lenght	165 mm



Six Bang

Illumination intensity	Up to 1.5 Mcp
Sound intensity	170-180 dbs (approx)
Delay time	1.5-2 Second
Total weight	530 g (approx)
Diameter	40mm
Lenght	118 mm
Function time	3 - 4 Sec

### Tear Gas Shell

Contains CS composition and is used for riot control by the law enforcing agencies, using 38mm Tear Gas Gun. The parameters and its characteristics conform to international standards. Aluminum cased payload enclosed in plastic casting.

Calibre	37/38 mm	Shelf Life	4 years
Range (long)	137 m (150yards)	Length	140 mm
Range (small)	68 m (75 yards)	Weight	150 - 160 g
Discharge time	35 Sec. (Plus)		



### CS Grenade

A non lethal hand throw grenade used for riot control. Produces white fumes of CS cause severe irritation of respiratory track, burning pain in nose and burning sensation in eyes etc.

### Smoke Grenade

Used to release a very dense cloud of smoke to fill the surrounding area to military unit such as infantry tanks air crafts and ships etc. Used for anti terrorist operations

## Security & Riot Protection Equipment

### Body Scanners

- » Hand held metal detectors for security and law enforcing agencies.
- » Gives an audio signal, red LED visual alarm and vibration
- » Available with rechargeable & consumable battery, and auto tuning
- » Contains low battery alarm



### Walk Through Scanning

Walk Through Gate is used for detection of metal contents at security locations. The system works on Induction Balancing (IB) technique. Whenever a metallic object comes within the vicinity of WTS an error signal is produced, which is digitally processed.



- » No. of zones: 06
- » Four LED alarm light bar
- » LCD screen readable in sunlight
- » Remote Controlled
- » Electric Current AC 21 5-230V
- » Power less than 35 W
- » Work environment -20 C to 55C

# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Bullet Proof Jacket

### Ballistic Jacket

GIDS indigenously developed ballistic jackets are suitable for both military as well as non-military applications. GIDS jackets can be used as a stand alone or with Ballistic plates to further enhance protection levels. State-of-the-art technology is utilized to create a product that combines higher protection level with reduced weight. Our product can also be customized to meet customer's specific needs.

### Ballistic Plate

GIDS ballistic plates are integration of hard ceramic hexagons, with high molecular weight polyethylene or aramid backing, with optimized composite construction to produce rugged multi-hit armor, reaching protection levels NIJ III plus at the lowest cost. They are available for both stand-alone and non-stand-alone use. Ballistic plates can be used various ballistic jackets due to their very high compatibility. State-of-the-art technologies are applied to create new products that combine a high protection level with less weight and design and manufacturing the product according to the customer's needs in a variety of sizes and shapes.



### Technical Specifications

Material	Soft insert UHMWPE HAP = UHMWPE + Ceramic
Protection level	PK Lvl III 6x rnds of 7.62 x 25 mm Takorev (TT Pistol) from 5m 3x rnds of 7.62 x 39 mm SMG Chinese (AK-47) from 15m 3x rnds of 5.56 x 45 mm INSAS (M-16) from 15m 3x rnds of 7.62 x51 mm rifle G3 from 15m
Back face trauma	Less than 44 mm
Sizes	Small, medium & large
Pattern / shade	As per user requirement
Design	As per Pakistan army general staff requirement (GSR)

### General Qualities / Provisions

- › Opening from sides and collar protection
- › Able to withstand rough handling in the field
- › Carrying bag available in nylon/parachute cloth of good quality for safe /prolonged storage / protection
- › Easy to wear and comfortable over prolonged period
- › CCD Color

## BARDA - Automatic Fire Extinguisher Ball

BARDA is a ball shaped fire extinguisher. When a fire occurs and no one is present; BARDA will self-activate upon contact with flame within 3-10 seconds and effectively disperse the extinguishing chemicals resulting in extinguishing the fire. Additionally, when it comes in contact with fire, it will give a loud noise as a fire alarm. Because of these features, it can be installed in many fire prone areas such as; above electrical circuit breaker or in a kitchen etc. No special training or skill is required to operate BARDA and no need to face the danger of the fire. No inspection or maintenance is required for the product's life span of 05 years.

### Features:

- › Fully Automatic and Rapid Responsive fire protection system
- › Rolls like a ball, explodes in a bang to create attention not destruction and puts out fire like an efficient fire extinguishing tool
- › Unlike a typical fire extinguisher; it will activate by itself when in need, and doesn't need a supervision in case of any fire emergency
- › Very effective when put near flammable objects (circuit breakers, gas tanks etc) to avoid emergency

### BARDA – (Fire Extinguisher Ball) Specifications

- › Material weight: 1.2±0.2Kg
- › Total weight: 1.3±0.2Kg
- › Shape: Ball type
- › Diameter: 15cm
- › Warning sound: 120dB (Impulse noise)
- › Instruction: Fixed position by automatic fire sensor and /or throw in fire area
- › Ignition: Automatically explodes within 3-5 second after contact with fire.
- › Effective extinguish area: 2-3 Cubic meter
- › Lifespan: 5 years



### Electrical Fire

In case of electrical fire; installed near electric circuits, BARDA prevents the hazard under 5 seconds.



# GLOBAL INDUSTRIAL & DEFENCE SOLUTION (GIDS)



## Erupting Fire

If thrown into the erupting fire, it self-activates as soon as the temperature of fire hits around 110 degrees.



## Flammable Hazard

If installed in warehouse filled with flammable material, it stops the fire from creating a bigger damage.



## COMPARISON

### Automatic Fire Extinguishing Ball and Traditional Fire Extinguisher Tank

<b>Description</b>	Fire Extinguishing Cylinder	Fire Extinguishing Ball
<b>Weight</b>	It's hard to hold because of heavy weight.	It's easy to hold because of light weight, only 1.3 kg and due to the sphere shape, so it's easy to roll or toss into the fire base.
<b>Human Security</b>	Because people need to come closer to fire base around 6 feet or 1.8 meters, they are more likely to get effected by fire and smoke inhalation.	No danger of getting burned by the fire or smoke inhalation because people can stand away in safe position and roll it into fire base.
<b>Chemical Inside</b>	There is pressure inside, so that the chemical can coagulate .	There is no pressure insid
<b>Maintenance</b>	Requires regular maintenance after every 6 months	No maintenance is required throughout 5 years life span.
<b>Concentration of Dry Chemical Powder</b>	30 - 45%	90 +- 3 %
<b>Possibility of Failure</b>	If there is no regular maintenance or have not been used in long time, there is a chance of failure	As chemical is sealed inside a polymer, degradation chances are minimum and probability of failure would be almost zero.
<b>Environment</b>	Former fire extinguishing devices are usually made from CFC and other components that are harmful to environment.	BARDA Fire Ball is made from materials that have no CFC; instead Mono Ammonium Phosphate is used which is not harmful to humans, animals or environmen.
<b>Operation</b>	One is required to stand near fire base, 6 feet or 1.8 meters, and to hold tank around 18-20 seconds.	Stand away from fire base at safe distance and it works automatically.
<b>Sound</b>	None	When the fire ball activates, there is sound alert around 120 decibels which acts as fire alarm.
<b>Dangerous in usage</b>	Can get dangerous if you do not use carefully	No danger
<b>Skill Requirements</b>	Skills are required in using the fire extinguishing tank.	Because it activates automatically, there is no skill requirement No need of any training. Anyone can use it even women, children, or elderly. Only roll or toss into the fire base, no need to come closer to fire
<b>Refilling</b>	Refilling is required at regular intervals	No refilling is required throughout 5 years life span