

# *SUPA***SHOCK**

DEFENCE

ADVANCED DEFENCE MOBILITY SYSTEMS



**RHEINMETALL**  
DEFENCE

# PRODUCTS

## MOBILITY SYSTEMS: WHEELED VEHICLES

ACTIVE



PASSIVE



## MOBILITY SYSTEMS: TRACKED VEHICLES

TELESCOPIC DAMPER



PROPRIETARY BUMP STOP



## LIGHT WEIGHT RUNNING GEAR

SUPPORT ROLLER



ROAD WHEEL ARM AND ASSEMBLY



IDLER WHEEL ARM



TRACK TENSIONER



# PRODUCTS

## DEFENCE LOGISTICS: ALHS (AUTOMATED LOAD HANDLING SYSTEM)

WORLD'S FASTEST AND SAFEST CONTAINER & FLAT RACK  
LOAD HANDLING SYSTEM FOR LOGISTICS TRUCKS

- ✓ Survivability
- ✓ Safety
- ✓ Efficiency
- ✓ Simplified operation
- ✓ Flexibility
- ✓ Capability
- ✓ Value

### KEY CAPABILITIES

- Cycle time reduced by up to 75% over conventional hook loaders
- Enhanced automation - only one operator required in-cab to execute entire cycle
- Readiness for full autonomous upgrade
- Innovative design - higher payload margin, improved flexibility for varying load types and reduced load damage rate
- High mis-alignment between vehicle and loads
- Slopes and inclines
- Ability to load from lower than 0.3m to truck
- Loads from only top corner fittings
- Easy to operate computer-assisted interface
- Quality materials and testing to ensure durability and value



# PRODUCTS

## DEFENCE LOGISTICS: CRANE SYSTEM

### KEY CAPABILITIES

- Telescopic crane developed for installation on military vehicles for use in field operation
- Extremely compact design, with high lifting capacity
- Meets low weight requirements
- Upgradable to automated operation
- Increased functionality: Quick coupling integration for tools
- Flexible design integrable for land and maritime applications
- Designed to minimise boom deflection and cylinder loads



STOWED STATE



AUGER



CRANE

## DEFENCE SYSTEMS: ANTI-TANK GUIDED MISSILE LAUNCHER

### KEY CAPABILITIES

- Retractable turret-mounted launcher originally developed for Spike LR2 ATGM
- Weight optimised and extremely compact
- Reduction of vehicle width over traditional systems, no strike hazard
- Self-contained unit
- Mechanical and structural analysis, vibration and motion control and kinematics all completed in-house
- Less targetable



# PRODUCTS

## DEFENCE SYSTEMS: ARTIFICIAL INTELLIGENCE

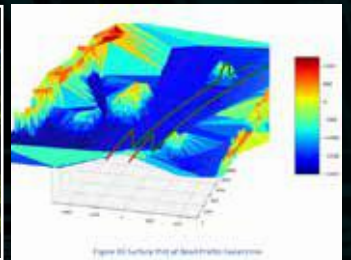
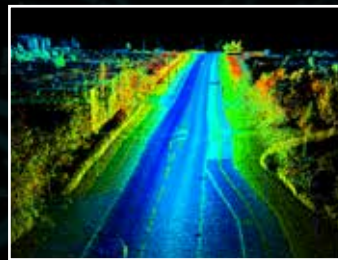
### ADAS

- Supashock's Advanced Driver Assistance System is designed to assist a driver making the experience safe, comfortable and simpler
- Several variants available as built in or add-on features
- Utilises 360 surround view with 4 cameras increasing visibility and situational awareness, particularly in military vehicles
- Lane keeping and detection system
- Speed limit detection
- Vehicle tailing, following and safe braking distance
- Lane keeping and detection system
- Speed limit detection
- Object detection and collision warning (including human and firearms)
- Drowsiness detection
- Tunnel height and width estimation



### ADAS: Predictive Suspension

- Predictive suspension based on 3D data
- 3D depth maps
- Collision detection and lanekeeping



### LSAS

- Supashock's Local Situational Awareness System utilises wide angle cameras capable of standard and thermal vision.
- Uses CANBus Communication
- 6 different video outputs
- Video over Ethernet

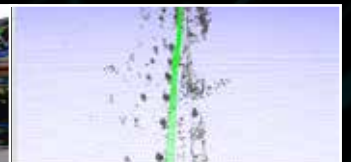


### LSAS Passive Radar System

- 360 degree view
- Detects people, vehicles or any other custom objects
- Can be built on thermal or night vision cameras
- Originally developed for vehicle systems, however is integratable for infantry use
- Can generate real-time maps

### Robotics

- 3D mapping
- Structure from motion
- Simultaneous Localisation and Mapping
- Monocular Visual Odometry (mapping area using single camera UAV)
- Navigation and path planning
- Scene segmentation and understanding



# QUALITY

## SUPASHOCK QUALITY STANDARDS

- ISO9001:2015
- ISO14001:2015
- ISO3834.2:2005
- AS9100D

# CAPABILITIES

## DESIGN

- Advanced component design (CAD)
- Aerodynamic design & analysis
- Control system design (software & hardware)
- Physics 3D model generation

## ANALYSIS

- Advanced component analysis (CAE)
- Tracked & wheeled vehicle multi-body simulation
- Kinematic analysis
- Full articulated & fixed vehicle simulation analysis
- Vehicle data logging/analysis & implementation (HUMS)

## ELECTRONICS

- Software development & programming
- Control system & code development
- Wiring and vehicle harnesses
- Custom sensors
- Electronic control units

## TESTING & VERIFICATION

- 3-axis dynamic suspension physical testing rig
- Environmental testing chambers
- Neutral salt spray testing chambers

## MANUFACTURING

- Advanced manufacturing facility
- 3D machining & precision fabrication
- Composite 3D printing
- Computer Aided Manufacturing (CAM)

## INTEGRATED LOGISTICS SUPPORT

- 6 degrees of freedom vehicle simulator
- Maintenance & servicing
- Training
- Through life support
- Live data analysis

# ABOUT SUPASHOCK

Supashock is a world-class producer of advanced mobility and motion systems operating in passive, active or autonomous modes - improving the mobility of defence vehicles. Supashock has capability to concept, design and lifecycle test advanced mobility systems tailored to each platform.

## SUPASHOCK USA

One Capitol Mall, Suite 670,  
Sacramento, CA 95814  
info@supashock.com

+1 925 488 8031

## SUPASHOCK HQ

2-6 Ardtornish Street, Holden Hill  
South Australia 5088

sales@supashock.com

+61 08 8333 1123

## SUPASHOCK MANUFACTURING

40 Cavan Road, Dry Creek,  
South Australia 5094

manufacturing@supashock.com  
+61 08 8333 1123