



## Company Presentation



# COMPANY



**SECANT** is a defence & aerospace company that provides *systems/sub-systems, products* and *engineering services / consultancy* for air, land and naval platforms on

## ***SURVIVABILITY SYSTEMS and ADVANCED COMPOSITES***

**SECANT** was established in 2013 and continues its activities in Eskişehir, TÜRKİYE with «*TE-256 (NCAGE Code)*» and «*51-999-5352 (D-U-N-S<sup>®</sup> Number)*».



*AS 9100*

Quality Management System



*NATO / National*

Facility Security Clearance



Registered Company by Turkish  
«*Ministry of Industry & Technology*»



Registered Company by Turkish  
«*Presidency of Defence Industries*»





# CLIENT PORTFOLIO



[www.roketsan.com.tr](http://www.roketsan.com.tr)



[www.stm.com.tr](http://www.stm.com.tr)



[www.turkishtechnic.com](http://www.turkishtechnic.com)



[www.mam.tubitak.gov.tr](http://www.mam.tubitak.gov.tr)



[www.meteksan.com](http://www.meteksan.com)



[www.mpg.com.tr](http://www.mpg.com.tr)



[www.fnss.com.tr](http://www.fnss.com.tr)



[www.interarmored.com](http://www.interarmored.com)



[www.aselsan.com.tr](http://www.aselsan.com.tr)



<https://www.mke.gov.tr>



[www.asfat.com.tr](http://www.asfat.com.tr)



[www.anadoluisuzu.com.tr](http://www.anadoluisuzu.com.tr)



[www.otokar.com.tr](http://www.otokar.com.tr)



[www.bmc.com.tr](http://www.bmc.com.tr)



[www.kolumanotomotiv.com](http://www.kolumanotomotiv.com)




<https://krantasgroup.com>



[www.ukrarmor.com](http://www.ukrarmor.com)





# SURVIVABILITY SYSTEMS



# WHAT WE PROVIDE



## ENGINEERING SERVICES & TRAINING / CONSULTANCY



- ✓ Design, develop and validate the «System» on behalf of the customer.
- ✓ Deliver the Technical Data Package (TDP) to the customer.
- ✓ The customer manufactures the «System» by themselves.
- ✓ Support the customer during the production & integration phases.
- ✓ IP Rights belongs to **the Customer**.

## ENHANCED-PRODUCTS



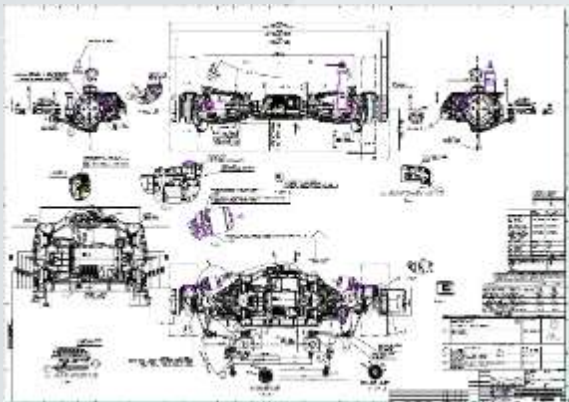
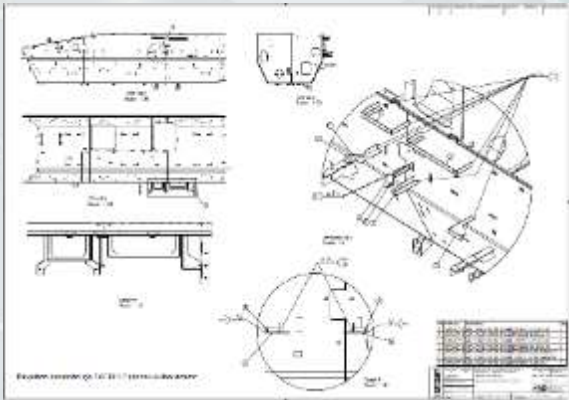
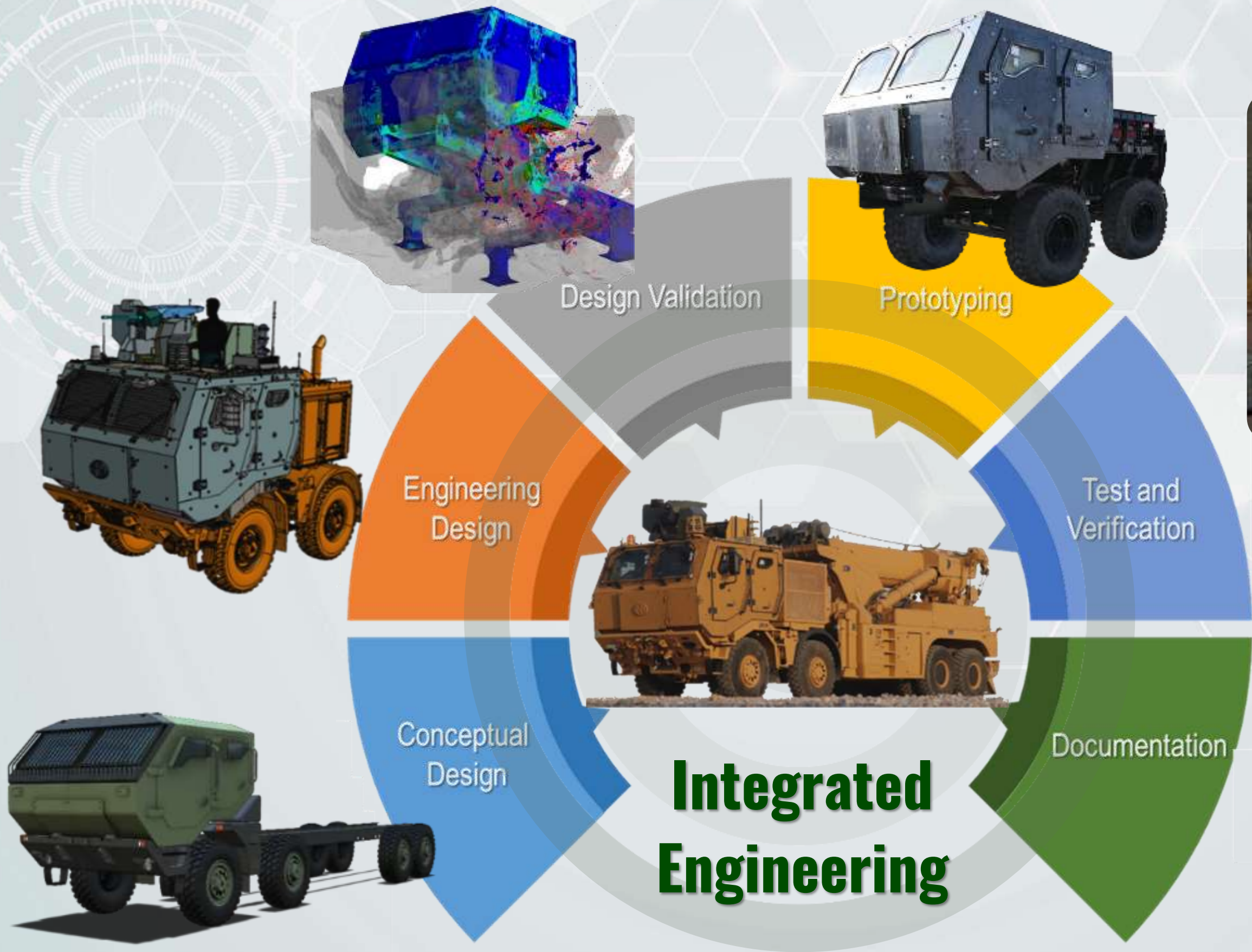
PATENTED  
PRODUCT



- ✓ Designed, developed and validated for the market.
- ✓ Could be customized according to customer specific requirements.
- ✓ Produced then delivery to the customer.
- ✓ Support the customer during the integration phase.
- ✓ IP Rights belongs to **SECANT**.



# ENGINEERING SERVICES





# TRAINING & CONSULTANCY



**SECANT** offers training and consultancy services on protection technologies and survivability systems in accordance with customer needs (online, individual, on-site, or public).



*Individual*



*On-Site*



*Public*

- ✦ Fundamentals of Protection Technology
- ✦ Armoured Platform Design & Development
- ✦ Survivability – Ballistic & Blast Protection
- ✦ Recommended & Authorized Test Plan
- ✦ Auditing for Design, Development, Test & Validation
- ✦ Vulnerability & Ballistic Protection Analysis



*«We are sharing not only theory but also application, experiences, and lessons learned»*



# KEY PROJECTS



## «KIRPI-II» 4x4 MRAP



**BMC**

As a *sub-contractor*, re-designing engine bay structure including with Ballistic Grill in compliance with upgraded mine & ballistic protection. Key deliverables;

- ✓ Survivability Engineering
- ✓ Engineering Design
- ✓ Digital Prototyping
- ✓ Design Validation
- ✓ Test and Verification
- ✓ Documentation (Technical Data Package) and
- ✓ Technology Transfer of Add-On Armour System



## «AMAZON» 4x4 APC



**BMC**

Survivability and Test & Verification Engineering *consultancy* during design, development, test & verification phases of the project. Key deliverables;

- ✓ Ballistic & Mine Protection Concept
- ✓ Vehicle Body Structure Design
- ✓ Mine Blast Simulations
- ✓ Test & Evaluation Master Plan and
- ✓ Manufacturing of Spall Liner, Heavy-Duty Hinge & Weapon Holder





# KEY PROJECTS



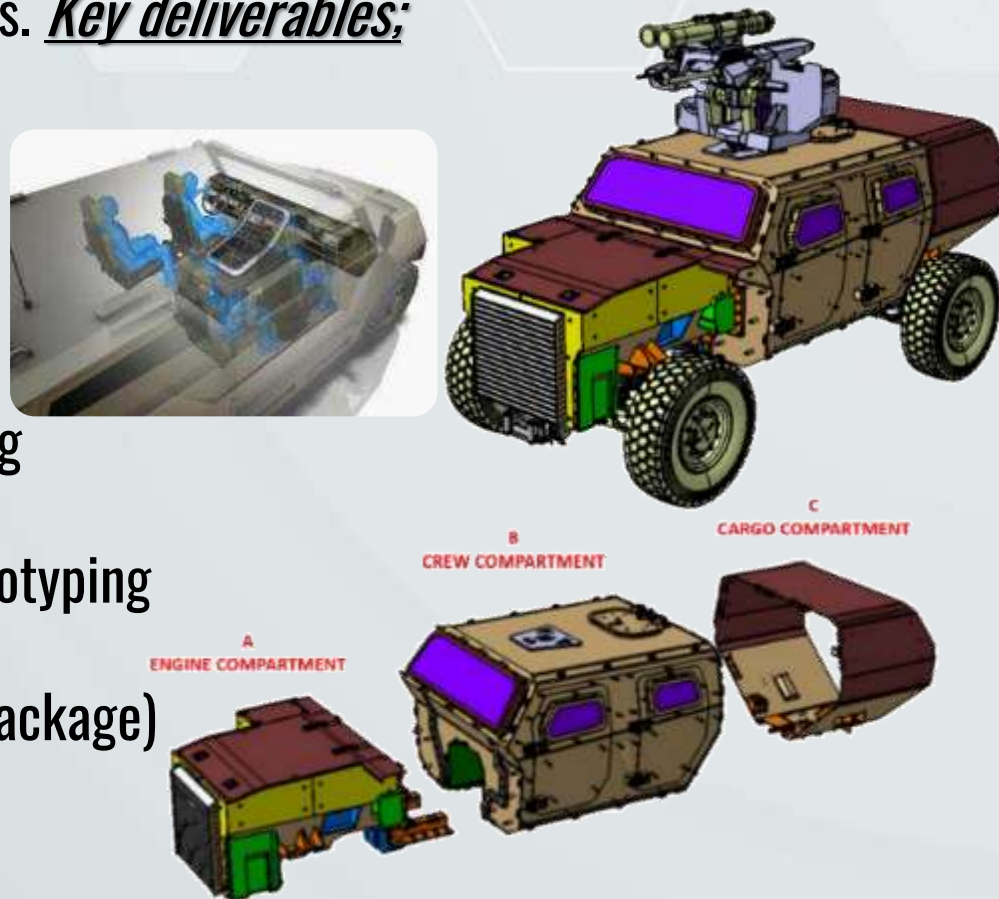
## «SAHIN» 4x4 APC



**BMC**

As a sub-contractor; designing of ballistic & mine protected 4x4 military vehicle in accordance with project requirements. Key deliverables:

- ✓ Survivability Engineering
- ✓ Conceptual & Industrial Design
- ✓ Automotive & Defence Engineering
- ✓ Engineering Design & Digital Prototyping
- ✓ Documentation (Technical Data Package)



## «TULGA» ARMoured PICK-UP



**BMC**

Engineering consultancy during design and development phases of the project.

Key deliverables:

- ✓ Survivability Engineering
- ✓ Conceptual & Industrial Design
- ✓ Automotive & Defence Engineering
- ✓ Ballistic Protection Concept
- ✓ Vehicle Body Structure Design





## «M4K» 8x8 ARMoured RECOVERY VEHICLE

As a *sub-contractor*, design, prototyping, and qualification of ballistic & mine protected cab structure in accordance with project requirements. Key deliverables;

- ✓ Survivability Engineering
- ✓ Conceptual & Industrial Design
- ✓ Engineering Design & Digital Prototyping
- ✓ Design Validation & Prototyping
- ✓ Test and Verification Consultancy
- ✓ Documentation (Technical Data Package) and
- ✓ Manufacturing of Add-On Armour, Spall Liner, Mine Lock, Heavy-Duty Hinges & Weapon Holder





## «RILA» 8x8 ARMoured PERSONNEL CARRIER (APC)

As a *main engineering contractor*, design, prototyping, and qualification of 8x8 APC vehicle in accordance with customer's (NATO Country) technical & tactical requirements. Key deliverables:

- ✓ System Engineering & Project Management
- ✓ Survivability Engineering
- ✓ Conceptual & Industrial Design
- ✓ Engineering Design
- ✓ Design Validation & Prototyping
- ✓ Test and Verification Consultancy
- ✓ Documentation (Technical Data Package) and
- ✓ Manufacturing of Spall Liner, Mine Lock, Heavy-Duty Hinges & Weapon Holder

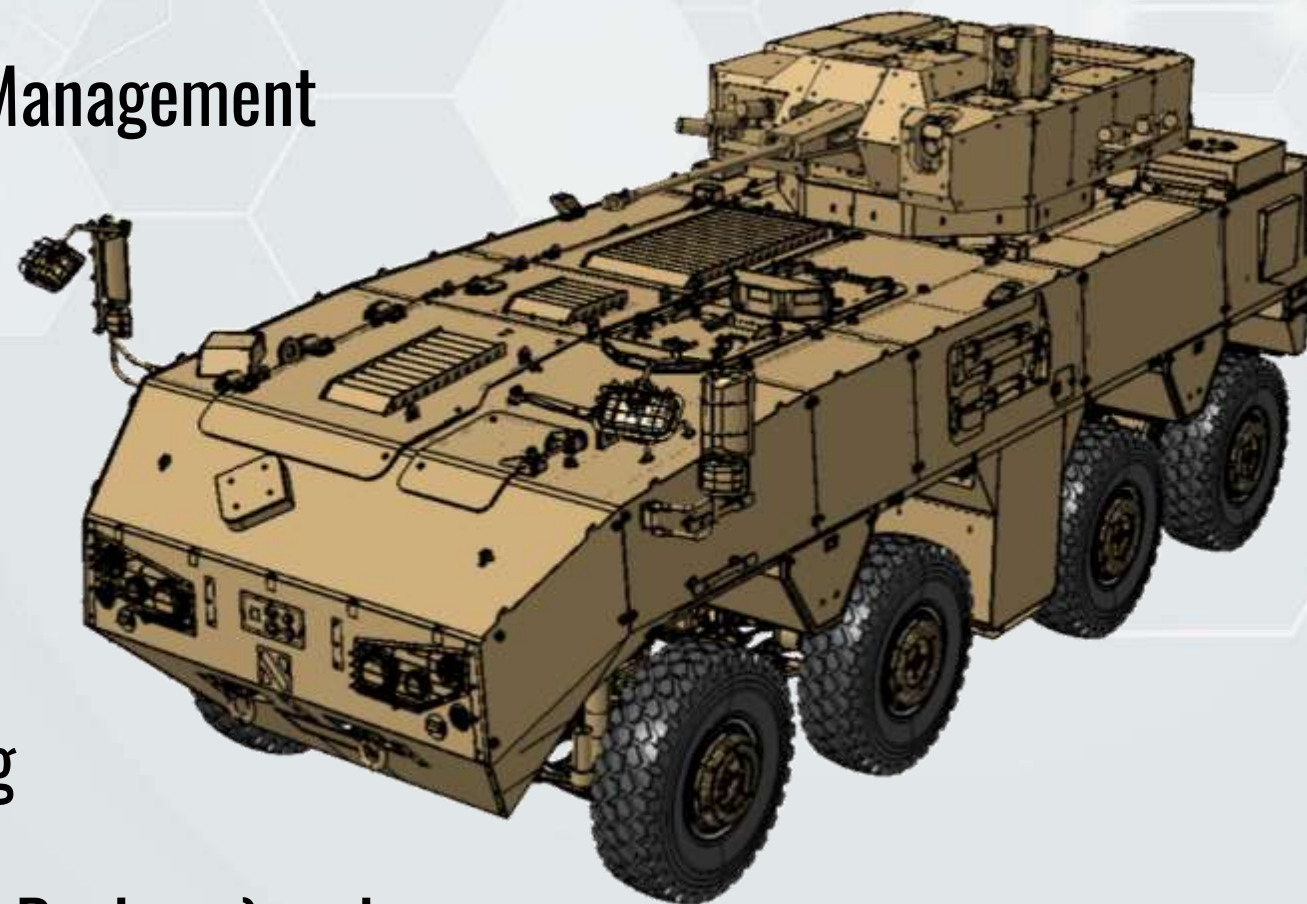




## «ARSLON» 8x8 ARMoured COMBAT VEHICLE (ACV)

As a *main engineering contractor*, design, prototyping, and qualification of 8x8 ACV vehicle in accordance with customer's technical & tactical requirements. Key deliverables:

- ✓ System Engineering & Project Management
- ✓ Survivability Engineering
- ✓ Conceptual & Industrial Design
- ✓ Engineering Design
- ✓ Design Validation & Prototyping
- ✓ Documentation (Technical Data Package) and
- ✓ Manufacturing of Mine Lock, Heavy-Duty Hinges & Weapon Holder

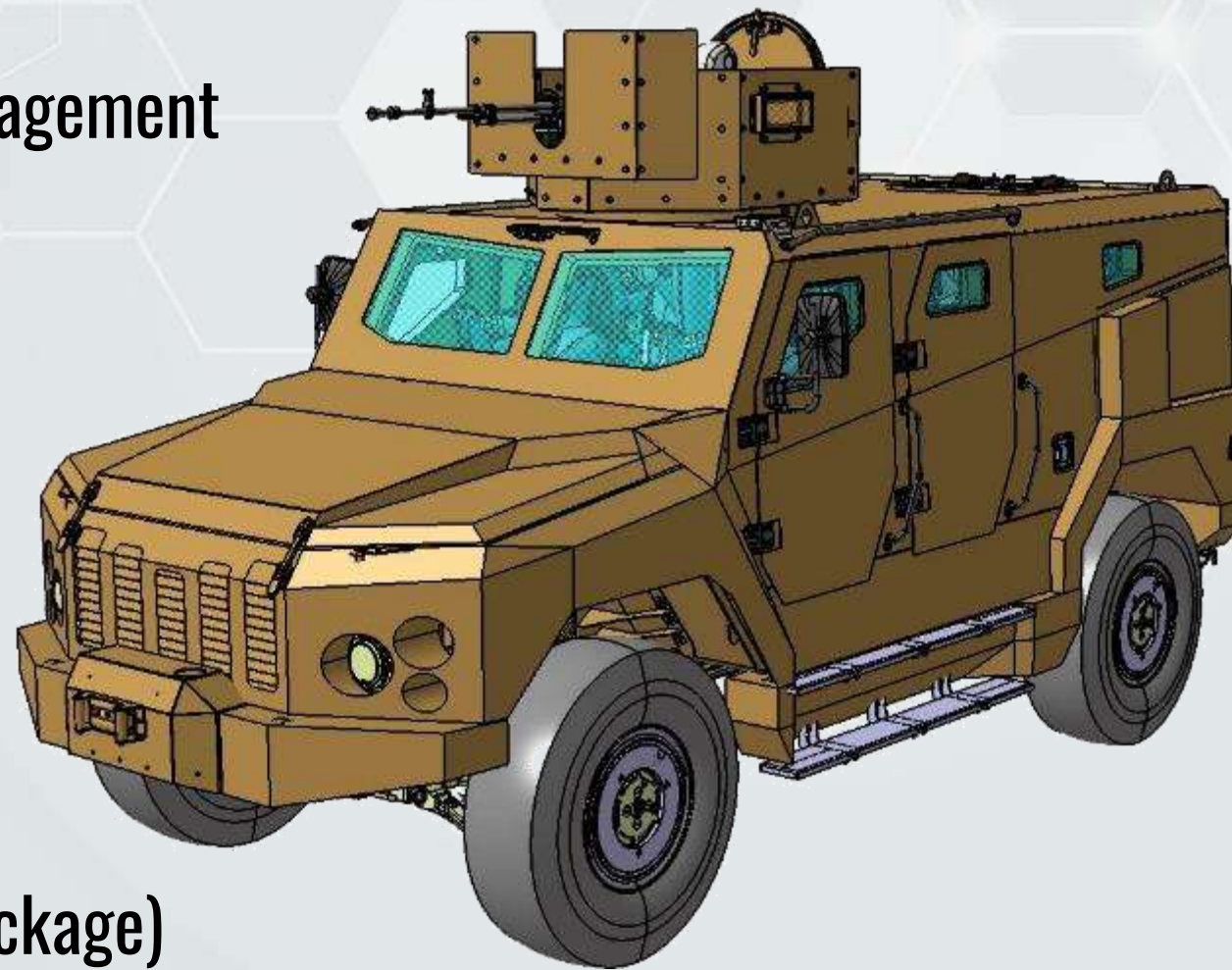




## «VARTA-II» 4x4 ARMoured PERSONNEL CARRIER (APC)

As a *main engineering contractor*, design, prototyping, and qualification of 4x4 APC vehicle in accordance with customer's technical & tactical requirements. Key deliverables:

- ✓ System Engineering & Project Management
- ✓ Survivability Engineering
- ✓ Conceptual & Industrial Design
- ✓ Engineering Design
- ✓ Design Validation & Prototyping
- ✓ Documentation (Technical Data Package)
- ✓ Test and Verification Consultancy





# ENHANCED-PRODUCTS



Spall Liner & Composite Armour



TENON<sup>®</sup>  
(Weapon Holder)



PATENTED  
PRODUCT

PATENTED  
PRODUCT

Ballistic Grill

Mine Lock



Add-On Armour





## Weapon Holder (TENON)

- ✦ Suitable for Military & Tactical Use
- ✦ Ergonomic and Easy-to-Use (One-Hand On-Off Capability)
- ✦ Compatible with Different Rifle Models
- ✦ No Need Additional Strap, Strip, Rubber Rope...etc
- ✦ Wide Grip Range (25 mm to 80 mm)
- ✦ Surface Coating for Corrosion Resistance & Plastic Coating to Prevent Scratching & Damage
- ✦ Tested & Qualified at Stanag 4569 Level 4a/4b Mine Blast & 150 Kg TNT Side Blast
- ✦ Approved by Turkish Army and Land Vehicle Manufacturers



Compatible with All  
Weapon Models &  
Variants



Ergonomic and  
Easy-to-Use Latch  
System



Resistance to  
Blast and Shock  
Effects



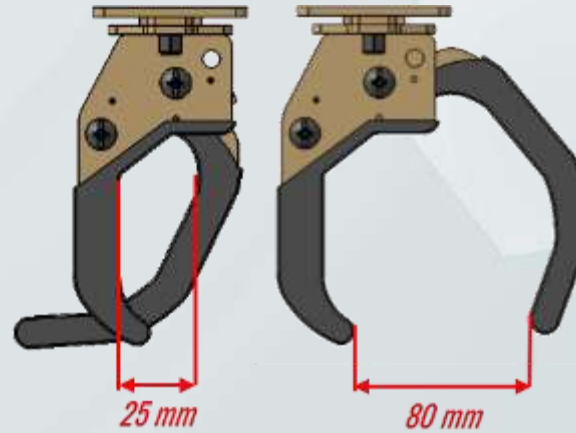
Can be Configured  
for Different  
Assembly  
Requirements



*One Solution for All Kinds of Weapon*



*In Service*

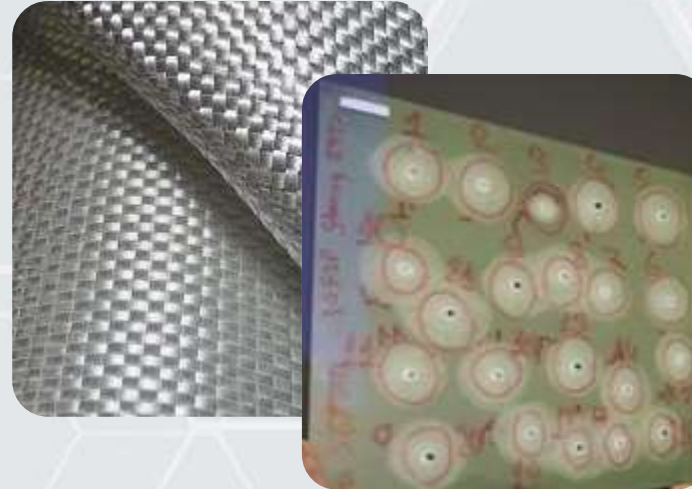


**TENON®**



## Spall Liner & Composite Armour

- ✦ Glass-Fiber, Aramid or UHMWPE Material Alternatives
- ✦ Customization for Different Threats, Technical, Tactical & Environmental Requirements
- ✦ Drastic Reduction of Cone Angle & Number of Spall
- ✦ 3D Shaped Solutions for Complex Shapes & Zones
- ✦ Lightweight, Thermal & Corrosion-Resistant, Cut to Shape, Integrated Soft Coating & Insulation, Ready-to Install...etc Alternatives per Customer Needs
- ✦ Support to Interface Design & Integration Phases



*Glass-fiber*



*Aramid*



*UHMWPE*





# ENHANCED-PRODUCTS



## Add-On Armour

- ✦ Diverse Alternatives for Different Ballistic & Technical Requirements (STANAG, MIL-STD, VPAM...etc)
- ✦ Could be Integrated to Complex (Ballistic & IED) Threats Scenarios
- ✦ Excellent Multi-Hit & Edge-Hit Capabilities
- ✦ Resistance to Environmental Conditions and Vandalism
- ✦ Lightweight, Cost-Effective, Cut to Shape, Metallic, Free of Ceramics...etc Alternatives
- ✦ Support to Interface Design & Integration Phases

*44 Shots on Single  
500x500 mm Panel for  
Stanag 4569 Level 3*



*Metallic, Composite or  
Hybrid according to  
Requirements*



810/1472/1366...etc.



*M4K (MPG)*



*KIRPI-II (BMC)*

*Combat Proven in Service*

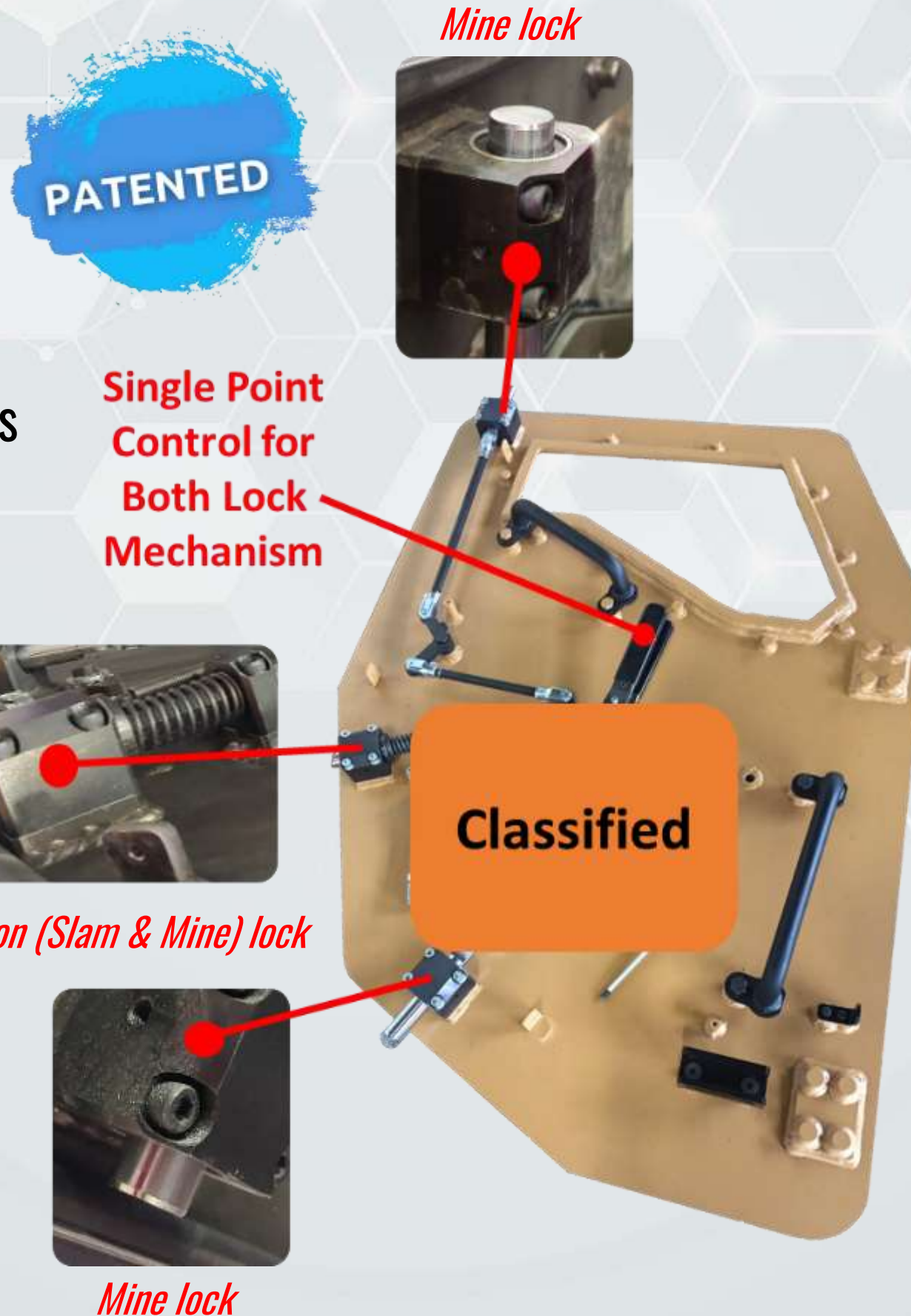


# ENHANCED-PRODUCTS



## Mine Lock

- ✦ Resistance to mine & IED effects
- ✦ Ease of use compared to traditional solutions
- ✦ Single-point control for both slam-lock & mine-lock
- ✦ Adaptable design for different vehicle geometries
- ✦ Tested & qualified at Stanag 4569 Level 4a/4b mine blast & 150 Kg TNT side blast



*In service*





## Heavy-Duty Hinge



- ✦ Suitable for use all kinds of door and hatch structures on armoured vehicle (wheeled 4x4, 6x6, 8x8 & tracked) projects.
- ✦ Long service life with internal lubrication system.
- ✦ Excellent robustness & high strength with hot-forged manufacturing method.
- ✦ High corrosion-resistance with protective coating (1000 hours salt-spray test).
- ✦ Preventing uncontrolled movement with self-stopper design feature.
- ✦ Tested & validated with numerous mine blast, ballistic and automotive tests.
- ✦ Currently used in many military vehicles (combat proven).

## Heavy-Duty Combination Lock



- ✦ Allows to lock the doors & hatches from the outside with vehicle-unique combination-key.
- ✦ Could be customized according to different add-on-armour (AoA) gaps.
- ✦ Suitable for use all kinds of door and hatch structures on armoured vehicle (wheeled 4x4, 6x6, 8x8 & tracked) projects.
- ✦ Long service life with internal lubrication system.
- ✦ High corrosion-resistance with protective coating (1000 hours salt-spray test).
- ✦ Tested & validated with numerous mine blast, ballistic and automotive tests.
- ✦ Currently used in many military vehicles (combat proven).

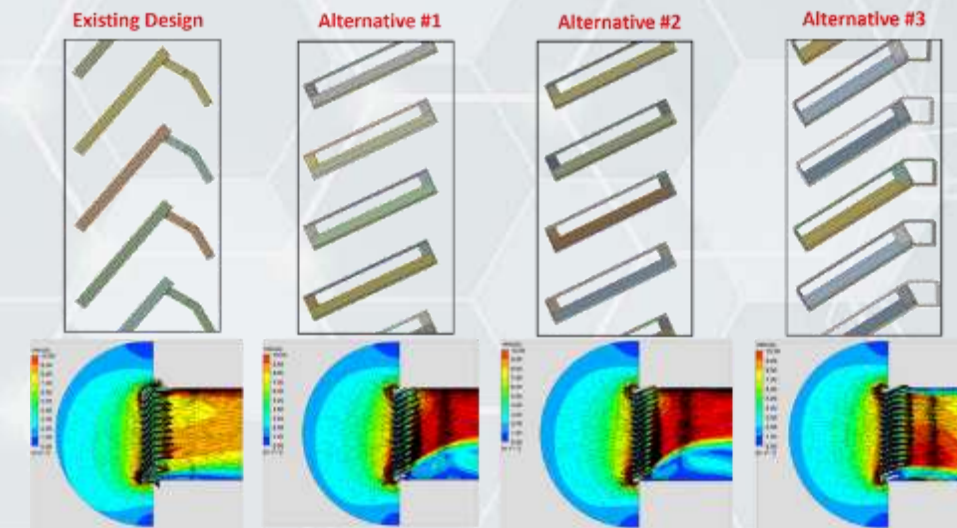


## Ballistic Grill (Grating)

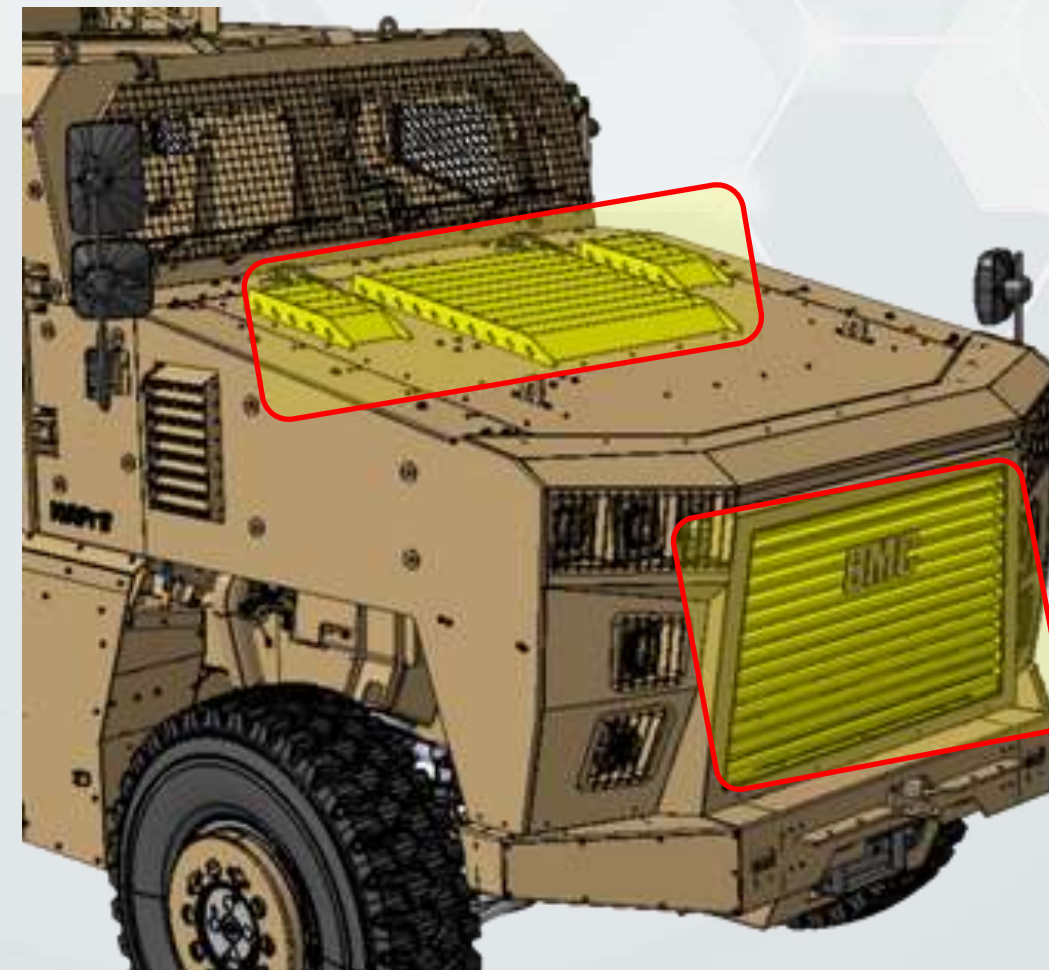
- ✦ Excellent ballistic protection & multi-hit performance
- ✦ Diverse alternatives for different ballistic & technical requirements (AEP, STANAG, MIL-STD, ITOP, SAE...etc)
- ✦ Enhanced air flow & pressure drop properties
- ✦ Resistance to harsh environmental conditions
- ✦ Low & high temperature durability



*Adaptable for all kinds  
of armoured vehicles  
(wheeled and tracked)  
according to technical &  
tactical requirements*



*Harmony & optimization of air flow, pressure drop and ballistic protection*



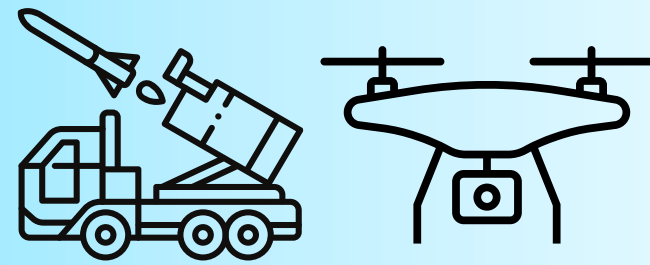
*In service*



# ADVANCED COMPOSITES



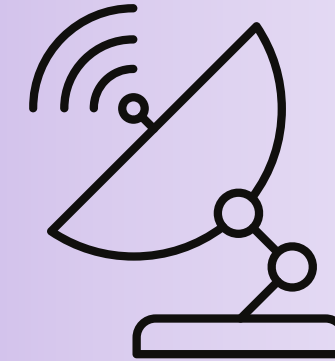
# WHAT WE PROVIDE



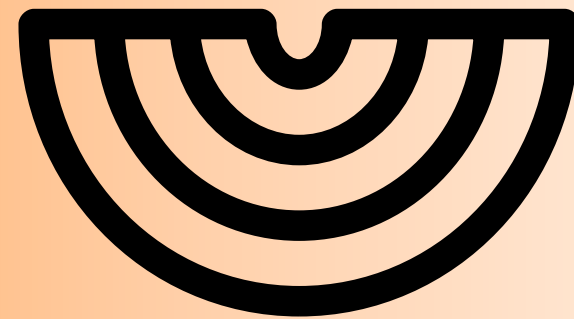
UAV & Missile & Torpedo  
Containers



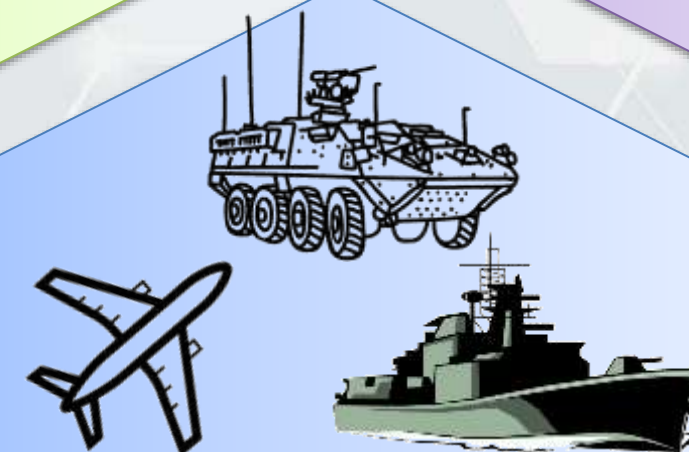
Radome  
Structures



Reflector  
Structures



Sonar-Dome  
&  
Acoustic Head



Tailored Solutions for Air,  
Land & Naval Platforms



# HOW WE PROVIDE



A checklist icon with a pencil and a checkmark, symbolizing the requirements phase.

**REQUIREMENTS**

A 3D model of a container, showing its internal structure and components.

**DESIGN & DEVELOPMENT**

A photograph of a green mould or tooling component, likely used in the production process.

**MOULD & TOOLING**

A photograph of a green prototype container, showing its external shape and features.

**PROTOTYPING**

A photograph of a container being tested on a blue frame, likely for structural integrity or load capacity.

**TEST & VALIDATION**

A photograph of a stack of finished containers, ready for serial production.

**SERIAL PRODUCTION**



# INFRASTRUCTURE



*Manufacturing & Assembly*



*Clean Room*



*Curing Ovens*



*Resin Transfer Moulding  
(RTM) System*



*CNC Router*



*CMM & Laser Scan*



*Polymer Coating*





# KEY PROJECTS



## UAV / MISSILE / TORPEDO STORAGE & SHIPPING CONTAINER

Design, development and manufacturing unique & modular advanced composite container structure for UAV's, anti-tank missiles and torpedos.





# KEY PROJECTS



## RADOME STRUCTURES

As a *sub-contractor*, design and manufacturing advanced composite radome structures for various defence & aerospace platforms. *Key deliverables:*

- ✓ Advanced Composite Engineering
- ✓ Engineering Design
- ✓ Mould Design & Manufacturing
- ✓ Documentation
- ✓ Manufacturing
- ✓ Sustainability & Traceability



**METEKSAN**  
SAVUNMA



## ACOUSTIC HEAD

As a *sub-contractor*, design and manufacturing advanced composite acoustic head structure for heavy torpedo «AKYA». Key deliverables;

- ✓ Advanced Composite Engineering
- ✓ Engineering Design
- ✓ Mould Design & Manufacturing
- ✓ Documentation
- ✓ Manufacturing
- ✓ Sustainability & Traceability



*Acoustic Head Assembly on Torpedo*



## REFLECTOR STRUCTURES

As a *sub-contractor*, design and manufacturing advanced composite reflector structures for various defence & aerospace projects. Key deliverables:

- ✓ Advanced Composite Engineering
- ✓ Engineering Design
- ✓ Mould Design & Manufacturing
- ✓ Documentation
- ✓ Manufacturing
- ✓ Sustainability & Traceability





# KEY PROJECTS



## SONAR DOME

As a *sub-contractor*, design and manufacturing advanced composite sonar dome structure for naval ships. Key deliverables:

- ✓ Advanced Composite Engineering
- ✓ Engineering Design
- ✓ Design Validation
- ✓ Test and Verification
- ✓ Documentation (Technical Data Package)
- ✓ Manufacturing & Integration
- ✓ Sustainability & Traceability





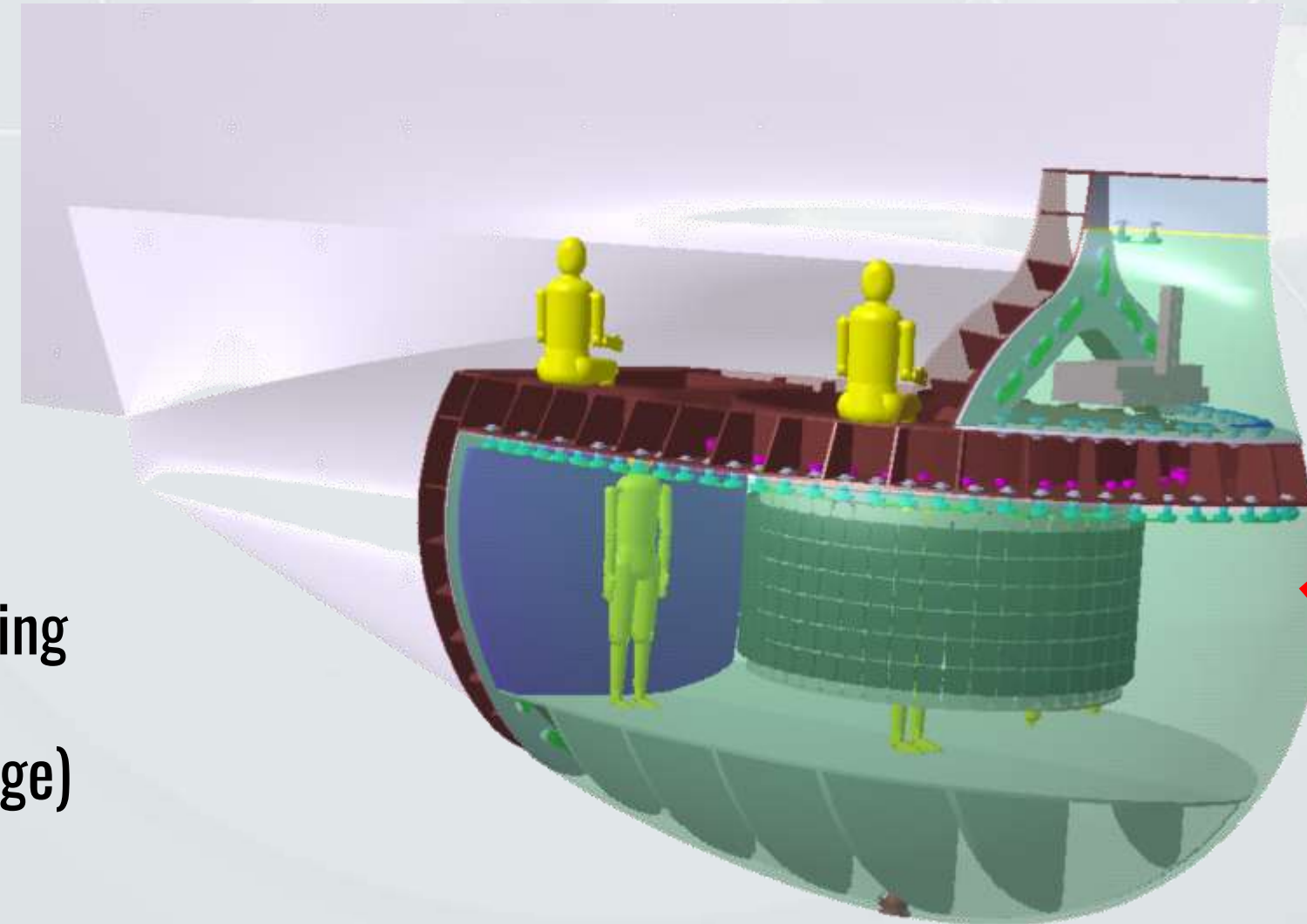
# KEY PROJECTS



## BOW SONAR DOME

As a *sub-contractor*; design and development advanced composite sonar dome structure for TF-2000 FRIGATE. Key deliverables;

- ✓ Advanced Composite Engineering
- ✓ Engineering Design
- ✓ Digital Prototyping
- ✓ Design Validation
- ✓ Transportation & Integration Engineering
- ✓ Documentation (Technical Data Package)



TÜBİTAK  
**MAM**







[www.secantglobal.com](http://www.secantglobal.com)

**SECANT Defence & Aerospace Inc.**



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