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KORHAN 35 mm Weapon System



KORHAN 35 MM WEAPON SYSTEM

KORHAN, to meet the needs of today's Battlefield, has been developed by ASELSAN using the national resources and most advanced technological facilities in order to enhance the capabilities of the Turkish Armed Forces.

KORHAN is a new generation armored combat system with high firepower, equipped with advanced target detection and tracking systems, equipped with the latest technology self-protection systems and environmental awareness systems, in order to provide the highest level of user and system continuation. The system has open and extensible architecture, updating and additions to the system based on the needs that will arise in the future will be implemented with national resources.

In addition to the tracked and tactical wheeled configurations of KORHAN, the amphibious configurations are also available in accordance with the requirements of swimming in the water.

In KORHAN, 35 mm cannon, with high rate of fire, is used as the main gun. The production of the cannon is made by MKE Institution using national resources. The KORHAN system also has the ability to use the 35 mm Airburst Ammunition developed and produced domestically by ASELSAN without any external dependency. For the main gun, there are 100 ammunitions available in the turret and 200 spare ammunition are stored in the vehicle. Loading of spare ammunitions into the turret is done under armor protection in the vehicle. The system also has a 7.62 mm machine gun mounted co-axial with the main gun for self-defense against close threats from the land.

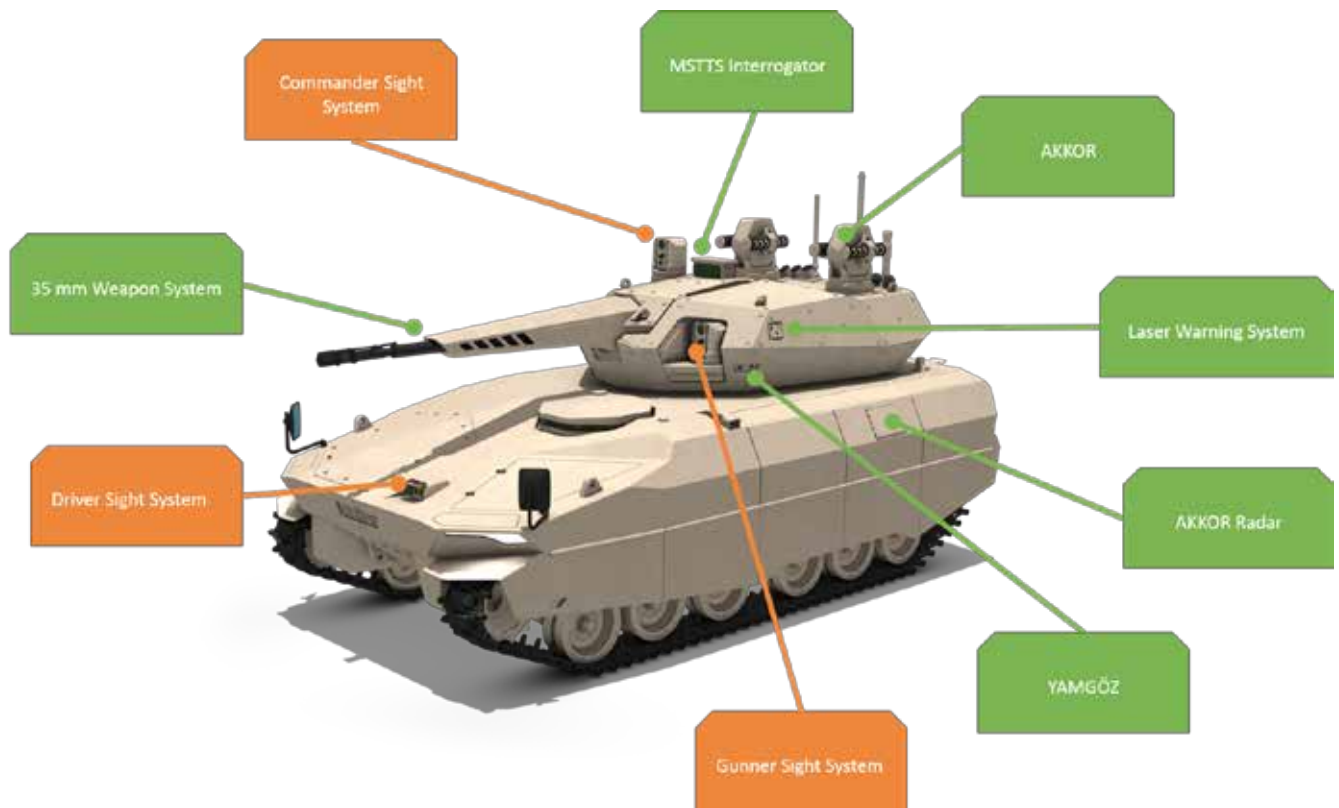
KORHAN has a high level of effectiveness against the targets behind the cover through the use of intelligent ammunition, as well as the neutralization of armored and light armored land elements. The KORHAN system also has the ability to defend himself against helicopters, fighter aircrafts at low altitude and unmanned aerial vehicles for intelligence and offensive purposes.

The automatic linkless ammunition feeding mechanism developed by ASELSAN allows for the selection of suitable ammunition for the type of threat. Armor-piercing, anti-personnel, airborne or destructive ammunition types can be loaded into the weapon system according to operational needs and cost-effective utilization is provided by choosing suitable ammunition for the threat type during battle.

The Turret, designed as an unmanned type for maximum user and personnel protection, allows maximum space for personnel and spare ammunitions by minimizing interference within the vehicle. The turret has two axis stabilization ability. In this context, the turret can rotate nx360 degrees unlimitedly on the azimuth axis and the weapon can rotate between -10 and +45 degrees on the elevation axis.

KORHAN is equipped with new generation communication systems developed by ASELSAN to meet the intensive communication needs of today's battle field. The system also has all the ability of performing tasks within the command and control network to coordinate with the elements to be jointly worked.

KORHAN has high survivability through the use of laser detection and warning system (LUS), active self-protection system "AKKOR", composite or ceramic modular armor protection and smoke. In addition, KORHAN has full dominance on the battlefield and superiority over the enemy with 360 degree situational awareness panoramic vision system (YAMGÖZ), gun dependent sniper and independent commander sight systems, battlefield recognition system (MSTTS) and satellite type Mini Unmanned Air Vehicle (MIHA). KORHAN System can be automatically directed and neutralized the threat by detecting the direction of the threat using the Sniper Locating System (AYHTS) on the turret when the system is under fire.



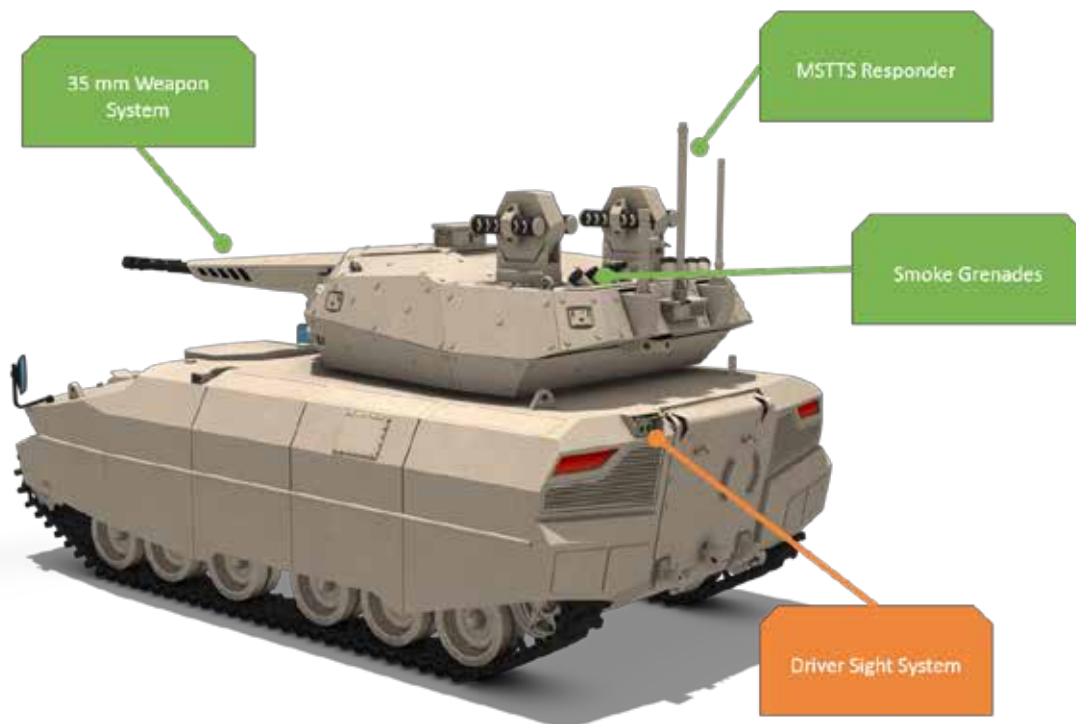
AKKOR, developed by ASELSAN, has been working to protect the system against the anti-tank threats (rocket and anti-tank missiles). AKKOR has a physical destruction "hard-kill" ability to perform this task. In the ability of physical destruction, threats directed to the system are detected during the final approach phase, physical destruction action are implemented in order to eliminate the effects of the threats with physical interaction (indirect or direct) before they hit the platform.

ASELSAN LUS is a system that detects and identifies laser threats directed at KORHAN within a short response time and with high sensitivity, and activates countermeasure systems.

LUS is a system that can detect and identify threats with high sensitivity at LUS's operating different optical bands including the Laser Distance Meter (LRF), Laser Target Marker (LD) and Laser Beam Rid (LBR) and activate countermeasure systems. The arrival angle, threat class and identity information (threat definitions) of

the laser threats detected by the LUS are communicated to the vehicle crew so that 360 ° situational awareness, early warning, optimal escape maneuvers or countermeasures are provided against the laser threats in the battlefield. LUS together with 8 smokes on turret form KORHAN's "Soft-Kill" part. With the information from LUS, Commander and Gunner Sight System can be automatically guided and the smokes automatically fire by user's decision.

AYHTS will be able to detect the direction and distance of fire shoot from infantry weapons at supersonic speed using the acoustic signals obtained from the barrel sound and the shock wave of munition created on the air with high precision. AYHTS is used in conjunction with the Inertial Navigation System (INS) to determine the direction of the shot, send a warning to the system screen, and direct the gun system to the direction in which the shot was fired. If the AYHTS is connected to the smokes, when firing is detected, smokes are automatically fired so that the views of the

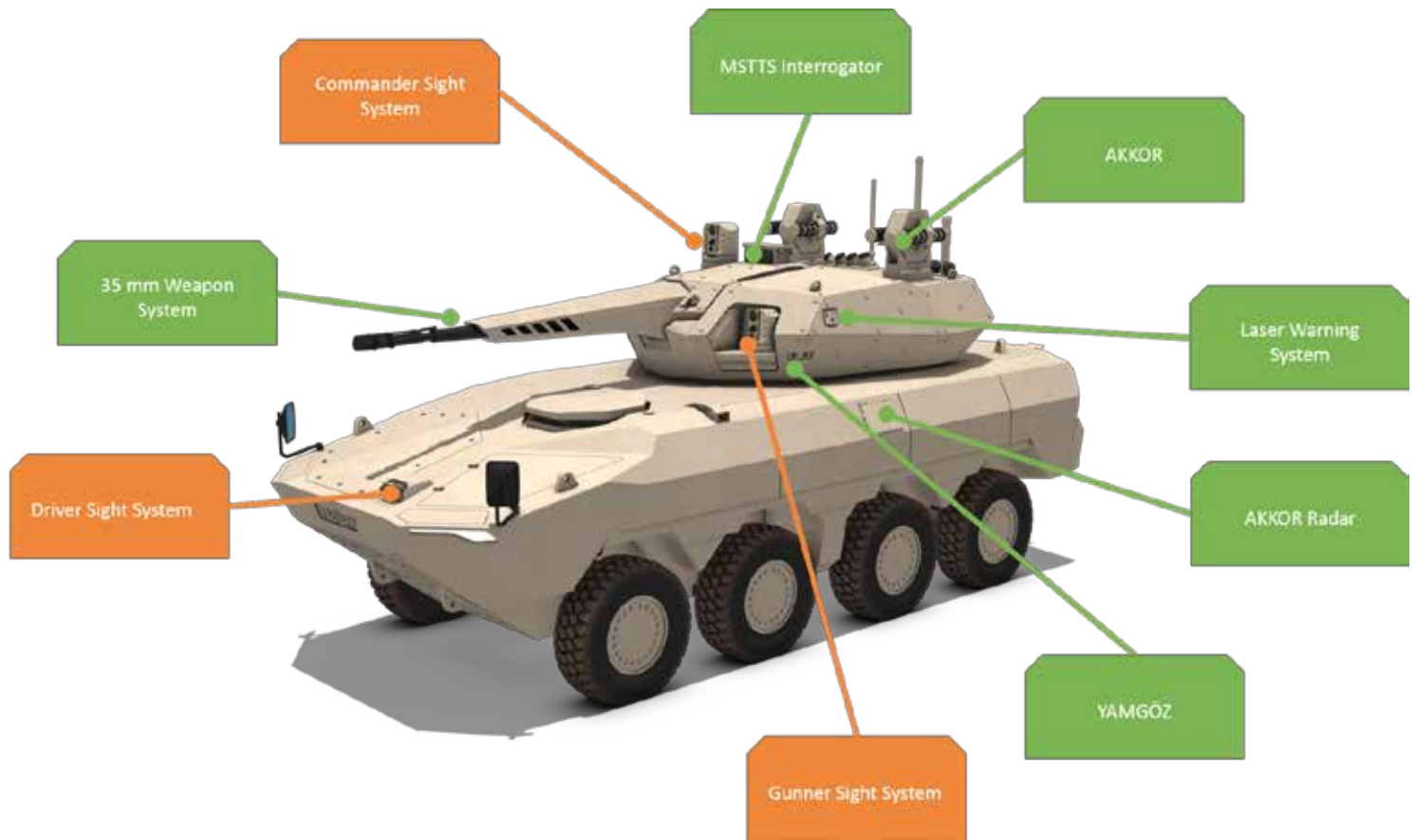


threats are closed and the time is saved for the vehicle to make the necessary maneuvers.

KORHAN provides the ballistic protection levels defined in STANAG 4569 standard. By means of the modular armor structure, the armor level can be reduced or increased according to the set of threats. The armor structure is suitable to be replaced and repaired in the event of a hit.

YAMGÖZ 360° Vision System, developed by ASELSAN, is a high performance day and night vision system. The user can detect movement around thermal or day or the fusion image of two views; by providing 360° visibility, even in bad weather conditions such as fog and dust, it can increase situational awareness and task efficiency. YAMGÖZ warn the crew against the approaching elements with movement sensors detection, and when necessary, the approaching targets can be taken under fire by the weapon system.

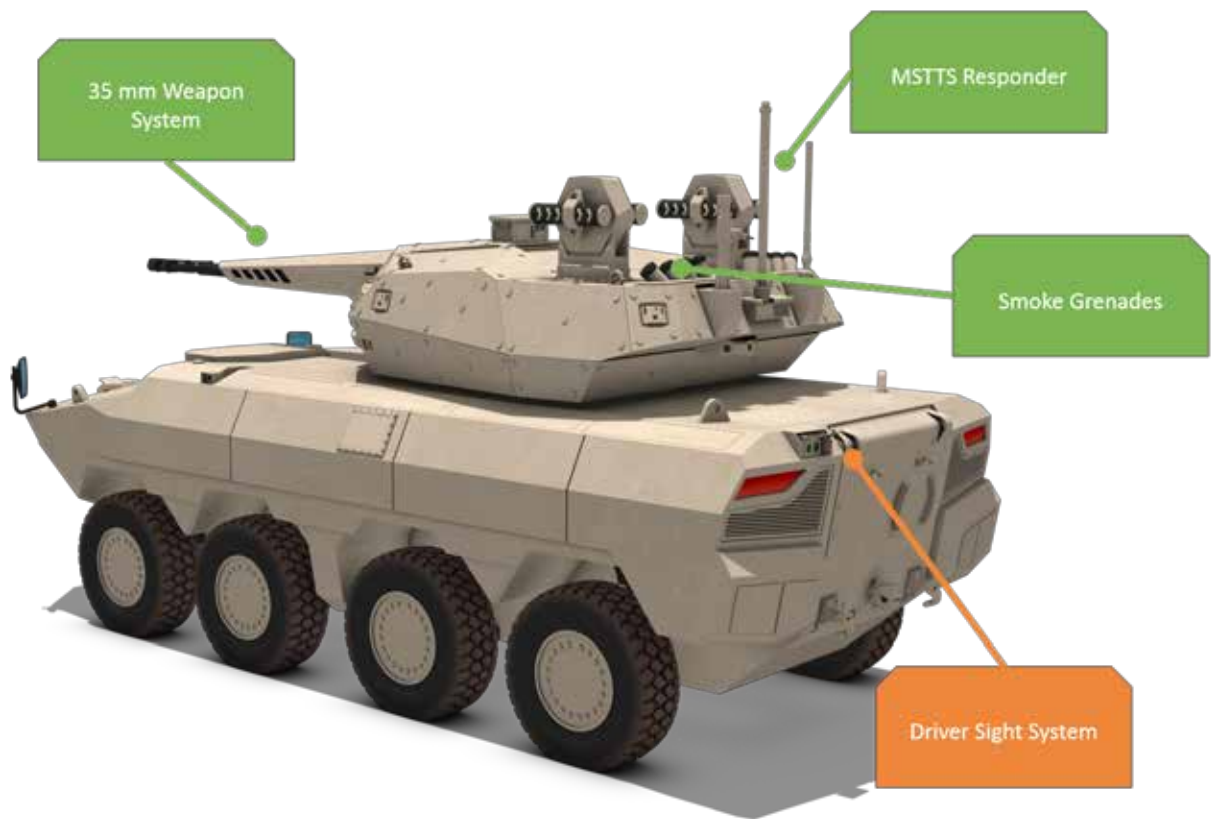
MSTTS ensures that the recognition / identification function is actively implemented to prevent accidental firing of friendly platforms on battlefields. In KORHAN, MSTTS system has both interrogator and responder feature.



KORHAN system has a Gunner Sight System which has an electro-optical package that can be rotated on the elevation-axis independently and rotated on the azimuth-axis semi-dependent to the shooting line. There is also a Commander Sight System, which can act completely independently on the elevation and azimuth axis. All optical sensors are equipped with a powerful video target tracking capability. By means of the integrated structure of the Gunner Sight System and the Commander Sight System, there is a continuous target search by the Commander and automatic transfer of the target to the Gunner (Hunter / Vibrator) ability. It is planned that the Commander Sight System will be integrated with the cask integrated control system in order to facilitate the use from inside the vehicle and to increase the effectiveness of environmental awareness.

There is a Mini Unmanned Aerial Vehicle (MIHA) integrated in the KORHAN system. Images taken via the camera on the MIHA are sent to the system in real time. Users can have advanced exploration and surveillance information during operation by reflecting the images, location vs. information coming from the MIHA to the user's screens. It is planned that MIHA will be used and follow the system while the system is moving.

The ASELSAN Driver Vision System on KORHAN is equipped with image processing technology that allows the driver to use the fusion technology (TV / thermal or thermal / night vision) for superior visibility in the sense of depth.



KORHAN has an Ambush Mode that the system can run quietly for a long time near the enemy line. In this mode, components that make noise in the vehicle (external power unit, vehicle engine, etc.) are not operated and the system consumes as little energy as possible because it cannot be fed from external power sources in this mode. While in the ambush mode, only the necessary units (such as situational awareness) are powered and the non-necessary are kept in sleep mode. The system comes out very quickly from this mode and can respond threats if it is needed.

When the mission critical status of the system is assessed, ease of maintenance / repair, common modular units to be developed can be used interchangeably and minimized MTTR (minimum time to repair) has been considered at the system design.

KORHAN is developed nationally by using the latest technology and is ready to provide the duty requirement of today's modern armies.



KORHAN OPERATIONAL SPECIFICATIONS

- Modular Unmanned Turret
- High Fire Power with 35mm Main Gun
- Smart (Airburst vs.) Ammunition Firing
- Automatic Ammunition Feed (Minimum 2 types) and Selection
- Detection, Tracking and Firing on the Move with Stabilized Gun Turret and Sight Systems
- New Generation Stabilized Sight Systems
- 360 Degree Panoramic Vision System
- Automatic Video Target Tracking
- Hunter/Killer Specification
- AKKOR Active Protection System
- Laser Detection and Warning System
- Sniper Locating System
- Advanced Exploration and Surveillance Information with MIHA
- Modular Additional Armor Protection
- Loading of Spare Ammunitions under Armor Protection
- Low Weight
- Low Silhouette and IR Visibility
- Ambush Mode
- Optional Remote Weapon Station System

THREAT SET OF KORHAN

GROUND BASED THREATS

Main Battle Tanks

Armored Combat Vehicles

Light Armored/Unarmored Combat Vehicles

Military Convoy

Infantry Troops

Building, Shelter etc. Fixed Assets

Military Units Which Attack Behind Cover

AIR THREATS

UAVS for Intelligence and Offensive Purposes

Fighter Aircrafts at Low Altitude

Helicopters



KORHAN TECHNICAL SPECIFICATIONS

GENERAL PROPERTIES *	
Speed	65 km/h (Tracked), 100 km/h (Tactical Wheeled)
Operational Range	490 km (Tracked), 600 km (Tactical Wheeled)
Crew	7+3 (Tracked), 9+3 (Tactical Wheeled)
CBRN	Protection (Positive Pressure)
Air Conditioning System	Available
Fire Extinguishing and Explosion Suppression System	Available
Length	< 6.4 m
Width	< 3.4 m
Height	< 2.8 m
Electric System	24 V (220 V AC Socket)
Smoke Grenade	8 pieces

GUN and AMMUNITION	
Main Gun / Ammunition	35 mm Automatic Cannon
Secondary Gun / Ammunition	7.62 mm Machine Gun (3750 pieces of Ammo)
RWS (Optional)	12.7 mm Machine Gun, 40 mm Grenade Launcher and 7.62 mm Machine Gun can be mounted.

SURVIVABILITY	
Active Protection System	Available (Developed by ASELSAN)
Laser Detection and Warning System	Available (Developed by ASELSAN)
Sniper Locating System	Available (Developed by ASELSAN)
360° Panoramic Vision System	Available (Developed by ASELSAN)
Battlefield Recognition System	Available (Developed by ASELSAN)
Satellite Type Mini UAV	Available (Developed by ASELSAN)
Driver Vision System	Available (Developed by ASELSAN)
Gunner Sight System	Available (Developed by ASELSAN)
Commander Sight System	Available (Developed by ASELSAN)
Armor Protection	Available
Ambush Mode	Available (Developed by ASELSAN)
Amphibian	Optional

TURRET	
Type	Unmanned Stabilized Remote Weapon Station
Weight	< 3.500 kg (STANAG 4569 Level 2)
Azimuth Axis	nx360° (Unlimited Rotation)
Elevation Axis	-10° / +45°
Max. Speed	> 60°/s (Azimuth and Elevation Axis)

*: The vehicle that provides at least these features will be used in KORHAN System. Vehicle specifications will vary depending on the vehicle model selected by the customer.





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ASELSAN A.Ş. is a Turkish Armed Forces Foundation company.

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