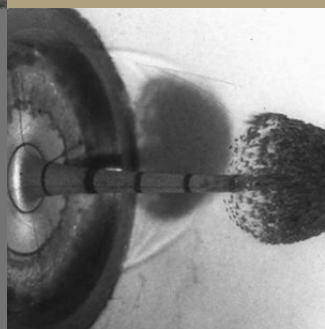


The Survivability Experts

**IBD**  
Deisenroth Engineering



**AMAP™-B**  
The Highly Effective Ballistic Protection



## AMAP™ – the High-Technology Protection System

AMAP is a synergistic modular High-Technology protection system. Developed and continuously improved by IBD (Ingenieurbüro Deisenroth / Germany), it is designed as a protection for all kinds of platforms: light vehicles up to heavy main battle tanks, vessels and aircrafts.

The central goal of our AMAP-philosophy is the highest possible effectiveness. In order to achieve this we focus on high performance and flexible next-generation technologies in vehicle protection research and development.

Based on our experience in delivering 30,000 protection kits we know what actual challenges man and material are facing all over the world. Through AMAP we provide accurate, scalable and modular protection concepts for a wide range of vehicles, mission areas and threat scenarios.

We always focus on one prime goal: to protect human lives in military operations and missions.

IBD has developed suitable AMAP concepts for almost every threat coming from conventional or unconventional weapon systems. We individually adapt these concepts to each platform and mission. Compared to conventional protection systems, the unmatched flexibility and performance of AMAP technologies substantially contribute to the optimization of our customers' survivability concepts.



### System Advantages:

- Highest level of protection due to application of advanced technologies (e.g. nano-technologies, composite materials)
- Synergistic modular design – flexible protection concepts for almost every threat scenario
- Individually adaptable to each vehicle
- Considerable reduction in areal density due to combination of passive and active protection systems
- Easy integration of new solutions into vehicle concepts due to the modular approach

### User Benefits:

- Highest survivability for soldiers due to substantially reduced threat and risk potential
- AMAP significantly improves the protection of all kinds of platforms (land vehicles, vessels, aircrafts)
- High tactical mobility and payload due to the low weight of the AMAP system
- Substantially reduced damage related costs due to easy maintainability
- Top-of-the-line concepts due to continuous feedback from missions in operational areas



## Optimum Protection against Ballistic Attacks

AMAP-B is a passive, modular high-technology system with synergistic properties. Design, construction and the use of advanced materials enable the protection system to absorb high amounts of impact energy and minimize the impact effects of attacking projectiles. Therefore AMAP-B offers an unprecedented Survivability for all platforms – from lightest to heaviest applications for platforms on land, sea or in the air.

The use of AMAP-B can be exemplified by applications on trucks, wheeled 4X4-vehicles or 8X8 and MBTs as well as naval vessels and helicopters. The protection modules are adapted in thickness and weight to the specific platform and specification. They can be designed to protect against for instance Kinetic projectiles (KEs) – from small to large caliber –, Explosively Formed Projectiles (EFPs) and different Anti-Tank Missiles (incl. the RPG-family).

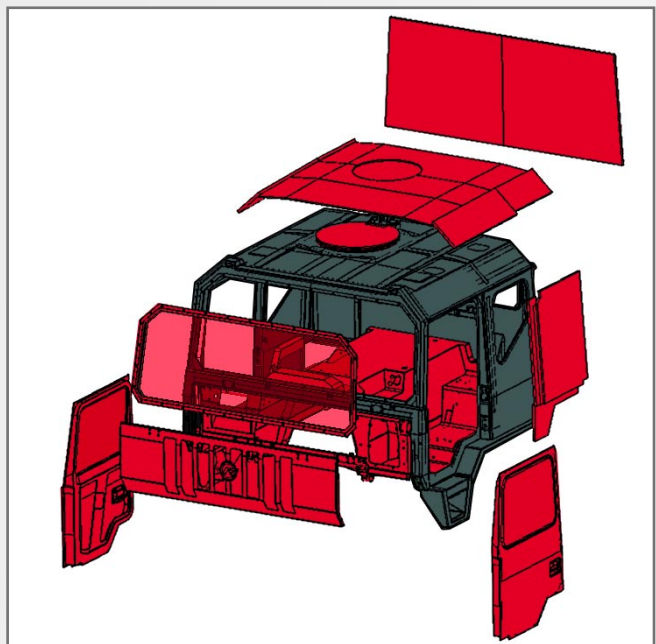
With the ability to withstand multiple hits from different threats, AMAP-B meets the STANAG 4569/AEP 55 multi-hit requirements and is certified at the levels 1 to 5, as the baseline. Further qualifications of other threats are provided to meet the customers' specific demands. Despite these high protection levels AMAP-B modules are characterised by an extremely low areal density.

In the case of hits from projectiles, damages to the modules are limited due to the design and the physical properties of the specifically developed materials (incl. ceramic-composites and light-alloys based on nano-technologies). Additionally, the protection modules are constructed in a way to allow for repairs in field.

The use of AMAP-B, embedded into the synergistically modular IBD AMAP concept, ensures the best protection at present and for the future.



ASTRA with AMAP-B Light Armor



ASTRA Protection Kit

### Light Armor

#### The Protection System for Trucks, Aircrafts, Helicopters and Boats

The use of the lightest version of AMAP-B provides the optimum protection of light vehicles and platforms. Typically this includes protection against direct fire (fragments, small caliber and machine guns) in conventional as well as asymmetric warfare, with an outstanding multi-hit performance. Due to the modular system with a low areal density, the protected vehicles achieve a much better tactical mobility and at the same time provide the potential for upgrades to meet increased threat levels, if needed.

Generic technologies with adaptations to the specific environments improve the protection of Army, Navy and Air-Force. AMAP-B is successfully used in several missions with additional potential for the future.

#### Threats:

- Fragments
- Small arms, heavy machine guns
- Small KE-caliber (14,5 mm)

#### Vehicles:

- Light to Medium Military Vehicles
- Trucks
- Helicopters and other Aircrafts
- Boats and other Naval Vessels



Wheel-Loader AS6M

### Medium Armor

The medium version of AMAP-B for medium platforms like combat vehicles and APCs (e.g. CV 90 and AMV) gives these vehicles a high protection against ballistic threats, including different Anti-Tank Missiles. This increases the protection levels drastically and supports the overall Survivability.

#### Threats:

- Fragments
- Small arms, heavy machine guns
- KE-caliber, typically up to 30 mm
- Anti-Tank-Missiles

#### Vehicles:

- Armored Modular Vehicle (AMV), 8x8
- Combat Vehicles (CVs)
- Schützenpanzer (SPz)



VBC with AMAP-B Medium Armor



## Heavy Armor

With the application of the most advanced technologies the toughest threats such as different KE-threats and Anti-Tank Missiles can be defeated. AMAP-B provides complete protection not only at the front but also at the exposed sides/flanks. The modular technologies are applicable to all types of heavy platforms such as tanks, and are used in the innovative new IBD-concept called "Evolution". The concept is developed to meet the requirements of both conventional as well as asymmetric missions, with special consideration of weight and integration. With "Evolution", it is therefore possible to keep tactical mobility high and perform an easy upgrade of the legacy platforms.

### Threats:

- All KE-calibers (up to 125 mm)
- Anti-Tank-Missiles

### Vehicles:

- Heavy Tanks like Leopard 2 A4 Evolution, MBT 122



MBT 122 with AMAP-B Heavy Armor



Leopard 2 A4 Evolution with AMAP-B Heavy Armor

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