DIEHL
Defence

HPEMcarStop

Non-violent system for selective stopping of vehicles
in dynamic scenarios

The **HPEMcarStop**, developed by Diehl, offers entirely new possibilities for police and security personnel to stop suspicious vehicles without using violence and without endangering anybody. Now cars can be stopped even in uncertain situations.

The system consists of a powerful and optimised HPEM source integrated into an agile carrier platform and is designed for stopping vehicles in dynamic scenarios. The Grand Cherockee Jeep SRT8, being the most powerful jeep ever, was selected as a carrier platform. This car offers superior driving performance
(0 to 100 km/h in 4,8 sec) without attracting too much attention. The source is completely integrated into the vehicle body and the system can hardly be distinguished from a normal Jeep.

In contrast to conventional mechanical stopping methods, HPEM disturbs only electronics causing no mechanical damage to target cars and not harming individuals. The new HPEMcarStop technology has demonstrated its reliability during tests with more than 60 different types of vehicles from several international manufacturers.

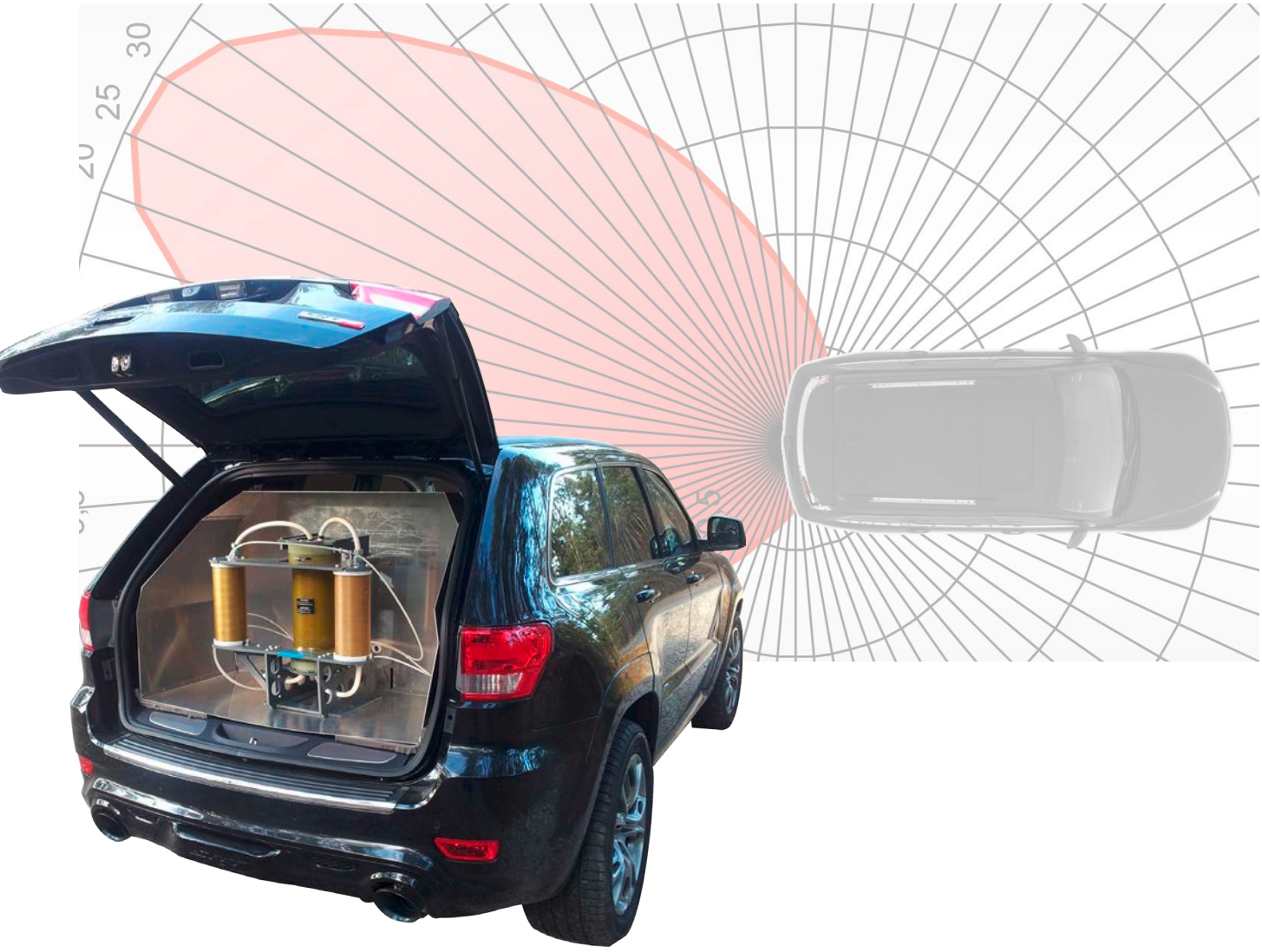
The HPEMcarStop is in use for special forces operations and protection of major events. HPEMcarStop has also been used for protection during Olympic Games.

Stopping vehicles

HPEMcarStop is designed to achieve the best possible result, target cars must be radiated from the front. Consequently the HPEMcarStop directs its radiation backwards at the overtaking car.

A vehicle approaching from the back or attempting to overtake the HPEMcarStop is exposed to radiation causing the motor control electronics to fail. The stopping effect can be initiated easily by the driver via simple user interface. Due to the electromagnetic field, the target car´s engine fails causing the vehicle to roll to a halt without physical damage. The invisible HPEM source generates a surprice effect offering security personnel a clear advantage.

HPEMcarStop provides new opportunities without any preparation time for current scenarios. Unlike spike strips, the target car can be stopped with high probability. Vehicles can be re-started after the mission. An additional benefit of HPEMcarStop is its disrupting effect on all kinds of car bombs with electronic ignitions. The unique HPEM-technology allows the operator to maintain a safe distance from the target and keep dangerous situations under control.



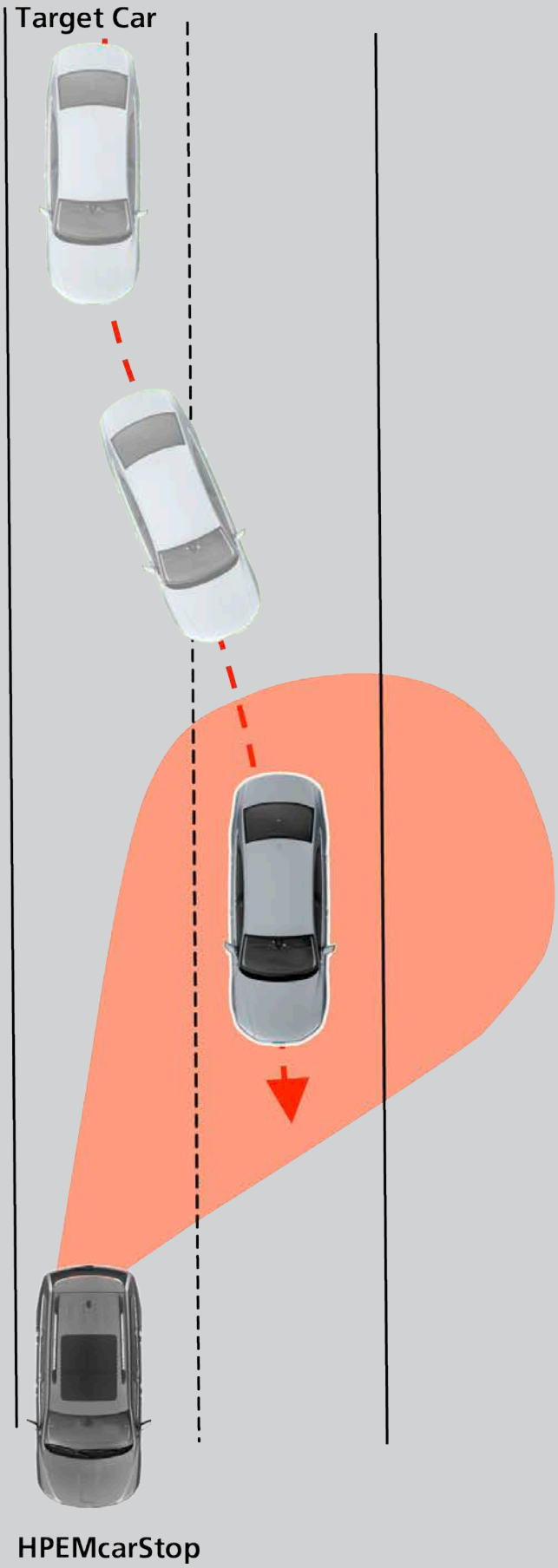


Fig. 1: Car Chase Scenario.

Taking out standing or slow cars

Many scenarios, for instance drug-handovers, bank robberies or identification of criminals, require preventing target vehicles from escaping.
Activation for only 2 seconds in a static or approach scenario can stop the target vehicle motor.

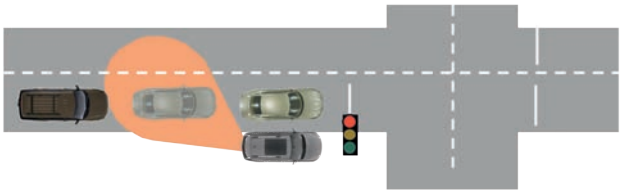


Fig. 2: HPEMcarStop radiating target car with identified criminal.

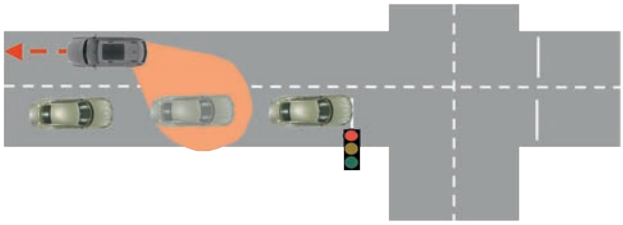


Fig. 3: HPEMcarStop scenario: preventing target car from escaping.

Protecting VIP Convoys

HPEMcarStop can be used for protecting VIP convoys facing risks involving other vehicles intending to ram or bomb VIP cars. HPEMcarStop is employed as the last car keeps other cars at a distance.

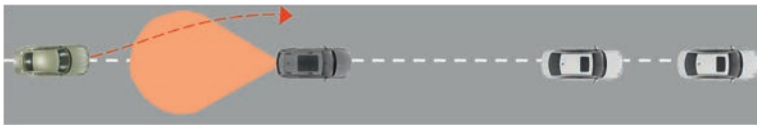


Fig. 4: HPEMcarStop emits rear radiation

Performance data:

HPEM source	Diehl High Power Electro-magnetic transmitter
Operating car stopping range	3-15 m depending on target car model
Yield of car stopping	> 75 % of all cars with engine electronics
Max. time of con-tinuous operation	3 min.
Maintenance cycle	Approx. after 80 to 100 car stops
Carrier car	Jeep Grand Cherokee SRT8 from 2012
Engine output	~470 hp / 345 kW
Max. speed	250 km/h electronically limited

Diehl BGT Defence GmbH & Co. KG
Fischbachstrasse 16
90552 Roethenbach/Pegnitz
Germany
Phone +49 911 957-2931
E-Mail: HPEM@diehl-bgt-defence.de
www.diehl.com

D-PRM/04/2013