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FIG 1

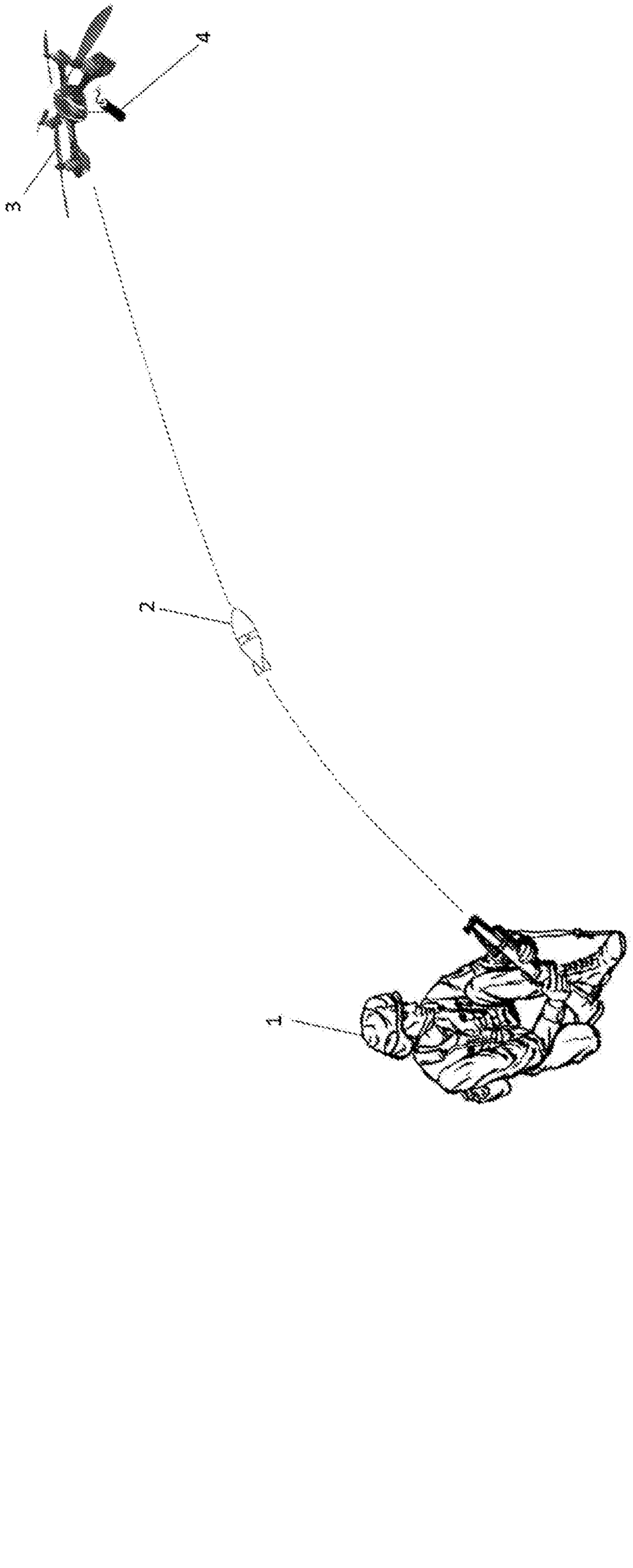


FIG 2

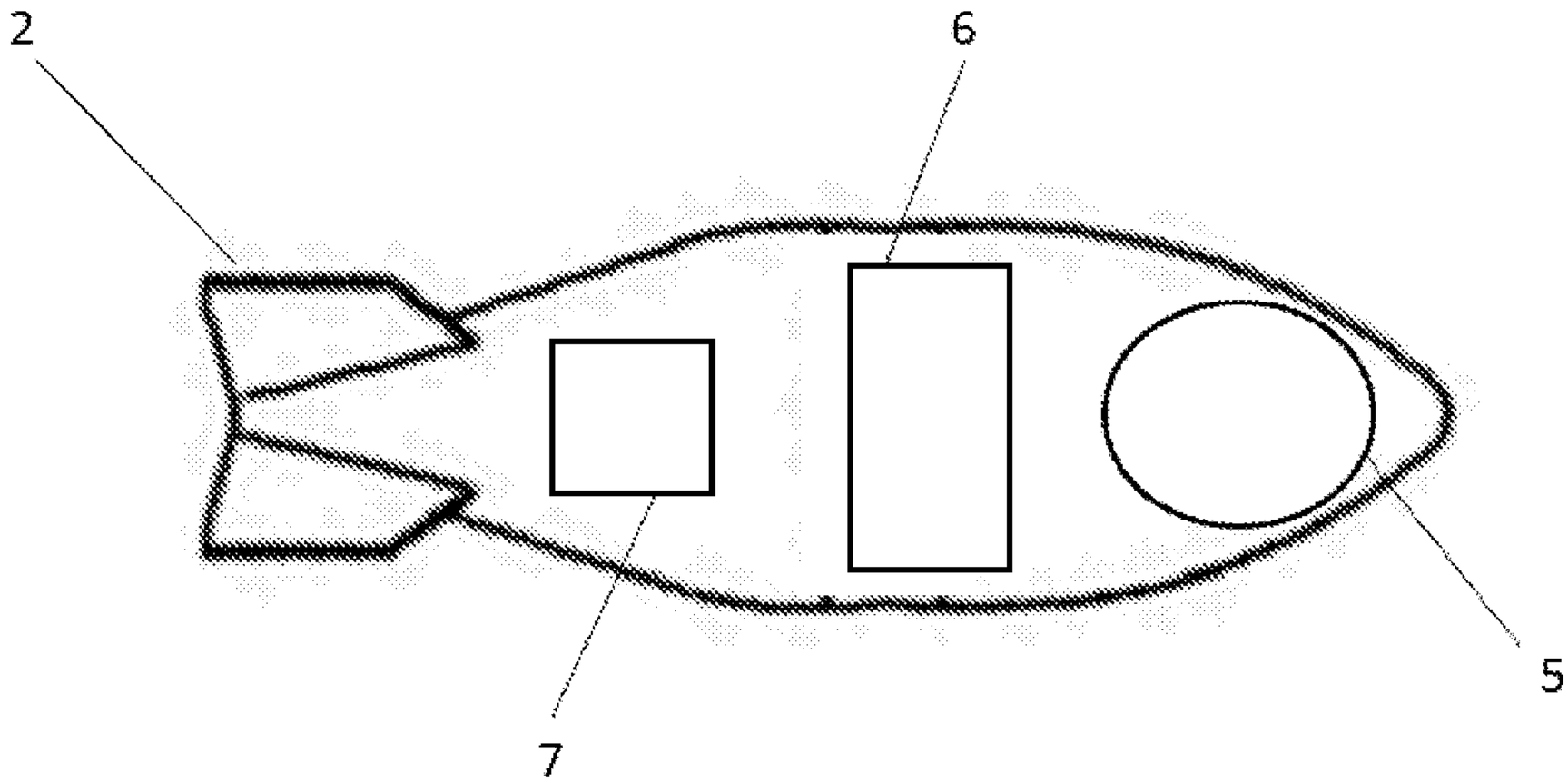
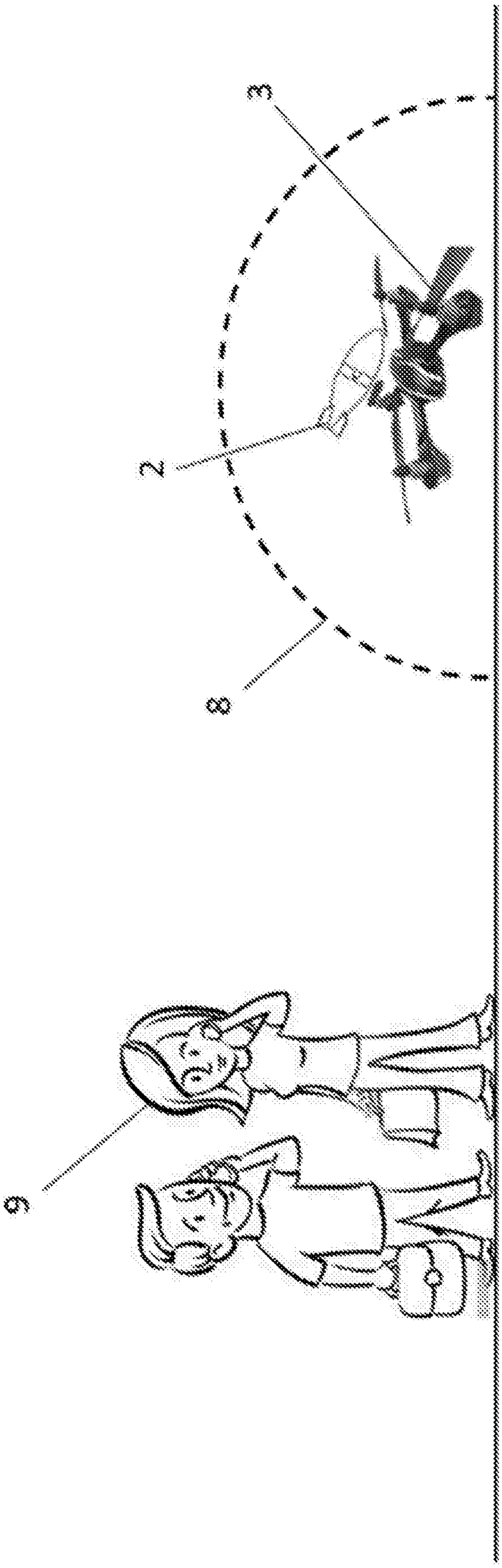


FIG 3



Inhibiting Electronic Systems and/or Remote Control of Remote Object

Field of the Invention

The present invention seeks to inhibit the electronic systems or remote control of a remote object by using electronic counter measures. Specifically when the object is at a distance from the operator and when it is not desirable to inhibit electronic devices that are at a distance from the object.

Background of the Invention

Terrorists are using increasingly sophisticated technology to deploy and trigger Improvised Explosive Devices (IEDs).

The increasing number of sophisticated but low cost and commercially available remote controlled vehicles (for land, air or water) means that the chances of one being fitted with an IED for terrorist purposes is increasing.

Whether an IED is deployed using a vehicle or simply by hand, it can be triggered by a number of readily available devices. One example of such a device is a modified mobile phone. Another example is a modified remote control system from a remotely controlled vehicle. Many vehicle remote control systems, such as those for quadcopters, have electronic outputs on the vehicle specifically for controlling custom equipment fitted by the user.

While it is possible to shoot at and destroy a remotely controlled vehicle suspected of carrying an IED, it is desirable to disable the vehicle while minimising the risk of the IED detonating as this would endanger the public and destroy valuable forensic evidence. It is also desirable to disable a remotely operated trigger that could cause an IED to detonate.

Electronic Counter Measures (ECM) (PT2556385) are routinely used by armies to prevent their enemy from remotely detonating Improvised Explosive Devices. An ECM inhibits the operation of many types of electronic devices within a set radius and as such they are unsuited for protecting large public areas where it is undesirable to disrupt daily life.

Summary of the Invention

The present invention seeks to overcome the problems associated with deploying an ECM with a large radius of influence. The present invention comprises a projectile with embedded ECM functionality.

In one aspect of the invention, the radius of influence of the ECM is limited to the size of the target object. For example, if the target object is a remote control car with a wheel base of 200mm that has been fitted with an IED, the ECM need only have a radius of influence of approximately 500mm.

In a second aspect of the invention, the operator is able to program the projectile such that the radius of influence of the embedded ECM can be changed before it is deployed to the target object. For example, if the target object is a quadcopter of 1m diameter, it would be beneficial to reduce the ECM's radius of influence to 2m whereas if the target object is a full sized car, then the radius of influence would need to be increased to 4m.

In a third aspect of the invention, the projectile is configured to become attached to the target object. This could be achieved in a number of ways – for example, the projectile could be in the form of a ball of soft glue that adheres to the target, or it could consist of a net that would tangle the target, or it could be fitted with a hook to snag on the target, or it could be sharpened to pierce the

target. This will prevent the projectile from rolling away from the target and ensure that the centre of the sphere of influence of the ECM is close to the target.

In a fourth aspect of the invention, the projectile is configured with an accelerometer such that the projectile is able to detect that it has come into contact with the target.

In a fifth aspect of the invention, the projectile is configured to enable the ECM once it has detected that it is in contact with the target.

Brief Description of the Drawings

A preferred embodiment of the invention will now be described, by way of example only and not in any limitative sense, with reference to the accompanying drawings, in which:

FIG 1 a projectile with ECM functionality that has been launched towards a vehicle.

FIG 2 shows the detail of the projectile

FIG 3 shows the projectile attached to the vehicle and the radius of influence of the ECm.

Detailed Description of the Invention

Referring to FIG 1, a launching device **1** is used to fire a projectile **2** at a remote controlled vehicle **3** that is carrying an Improvised Explosive Device (IED) **4**. In this case, the vehicle **3** is represented as a quadcopter but could also be a land or a water based vehicle.

Referring to FIG 2, the projectile **2** is equipped with a means **5** of attaching to the vehicle **3** that could be in the form of a hook, a net or glue. The projectile **2** is also equipped with an Electronic Counter Measures unit **6**. The projectile **2** is also equipped with an accelerometer **7**. The accelerometer **7** is used to detect the impact between the projectile **2** and the vehicle **3** and trigger the ECM unit **6** to activate.

Referring to FIG 3, the radius of influence **8** of the ECM unit **6** in the projectile **2** disables the control system of the vehicle **3**. The IED **4** is also prevented from being remotely detonated by the ECM unit **6**. Nearby users **9** of electronic equipment, either members of the public or members of an emergency service are able to continue their activities.

It will be obvious to one skilled in the art that the system described herein is not solely able to be used to counter remotely controlled vehicles but also ones that are directly controlled. It will also be obvious to one skilled in the art that the system described herein is not solely able to be used to counter the threat from aerial vehicles, but also by land and water based vehicles.

Claims

1. A system for interfering with the electronic control systems and/or the remote control systems of a target object, the system comprising:

a projectile equipped with an Electronic Counter Measures (ECM) unit for interfering with the electronic control systems and/or the remote control systems of the target object, and an accelerometer for detecting an impact between the projectile and the target object,

wherein the impact between the projectile and the target object is used to enable the ECM unit.

2. A system according to claim 1, wherein a radius of influence of the ECM unit is approximately the same size as the target object such that electronic control systems that are not part of the target object are not affected by the ECM unit.

3. A system according to claim 1 or 2, wherein the radius of influence of the ECM unit is programmable by an operator such that the radius of influence can be adjusted for specific requirements of a particular situation.

4. A system according to any of claims 1 to 3,

wherein the ECM unit is configured for interfering with the electronic control systems and/or the remote control systems of the target object within a sphere of influence of the ECM unit, and

wherein the projectile is designed to become attached to the target object so that a centre of the ECM unit's sphere of influence is close to the target object.