

## **Title: Non Lethal electric discharge launcher**

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### ABSTRACT

The goal of this technological research programme, started in Oto Melara in 2005 and supported by the Italian MoD, has been the realization of a demonstrator of electric discharge launcher. The research has dealt with many aspects:

- a basic research about propagation of high voltage current pulses in treated water,
- a medical study about the impact of electric current pulses on the human body
- the realization of an “electric hydrant” capable of launching water jets and current pulses up to 20 mt range, in safety conditions for the operator and the target.

The electric discharges are controlled in supplied energy, time length, frequency and current/voltage in order not to cause permanent injuries in hit people. The hit people feel a pain of controllable intensity (light/sharp). The system can be applied as an active denial system in police operation during check points, riot control and peace keeping operations.

Two configurations have been designed:

1. system installed in a vehicle,
2. man portable system.

The main component sub-systems are:

- water tank containing the water to be launched;
- 2 launch tanks that contain the liquid at high pressure;
- A compressor able to reach the desired pressure;
- An electric discharge generator;
- A launching device;
- A processor to manage the whole system;

A demonstrator of the vehicular configuration has been built and tested to verify the system capability. During the tests it has been demonstrated that:

- the current pulses are transmitted with treated and untreated water
- two distinct propagation ways are possible 1) in water with two water jets hitting the target at the same time 2) in water and ground with the grounded “hydrant” and only one water jet

The device is protected from a recently filed Italian patent application.