

## 9SOL Pending Patents

### **Patent 1 - *"Software application for calculating the effects of an explosion in the urban environment on personnel and on reinforced concrete and masonry constructions"***

**Abstract** - The application consists of a module for generating the characteristics of construction structures, a module for characterizing the environment in terms of propagation and action of the shock wave, a module for assessing the level of destruction of buildings following the explosion and a how to assess the effects of shock waves on personnel. Existing solutions for estimating the effects of the explosion on personnel and construction are expensive and have some limited features. The evaluation of the effects of the explosion on the buildings is done by evaluating the degree of destruction of the construction elements using the method of pressure-impulse curves and includes an intelligent module for defining the characteristics of the buildings. The application achieves a unitary approach, in a single interface, of the aspects related to the definition of the threat, the type of the exposure substance, the aspects related to the calculation of the explosive loads on the buildings, the generation of the building characteristics, the evaluation of construction and personnel damages effects.

### **Patent 2 - *"Procedure for determining the situation of fallen man"***

**Abstract** - The procedure consists in monitoring the acceleration values on the three axes, with the help of a specific software application. The method consists in successive determinations and comparisons with imposed threshold values of the degree of inclination of the body as well as the extent to which the subject remains inert and how long this state is maintained.

### **Patent 3 - *"System and method for collecting, analyzing and predicting information on the mobility of flows of people for evacuation of crowds in crisis situations, based on intelligent multi-agents to determine the shortest escape route"***

**Abstract** - The invention relates to a method and a hardware system for determining the information of mobility of persons, based on a network of sensors for detecting mobile devices on GSM, Bluetooth, Wi-Fi and analysis and prediction algorithms of multi-type intelligent agents and fuzzy logic, for evacuating pedestrian crowds in panic situations (crisis).