## Automatic Rescue System in Private Swimming Pools

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The project represents a full automatic rescue system for children in private swimming pools. The idea of the rescue mechanism depends on detecting the length of the person who has entered into the water area of the swimming pool using photo-electric sensors mounted at the four edges of the pool. In case that the length of this person is below a predefined value, a control system (PLC) activates a lifting of a in the bottom of the swimming pool installed rescue plate.

The sensor system is built by a tower at each edge consisting of several numbers of photoelectric cells arranged in series over each others and with sender and emitter cell at the opposite side. The lifting process is achieved by pneumatic system.

A further detection and alarm functions can be added, like buzzers and lights in the area of the swimming pool and inside the house. Extra photo-electric sensors and image processing programs can also be added to detect the presence of adults around the pool and makes the activation of the lifting process more precise.

A prototype has been designed and built and to implement the idea and it has worked as excepted and it represents a basic model which will be advanced in further graduation projects. (please see the figure below).

