

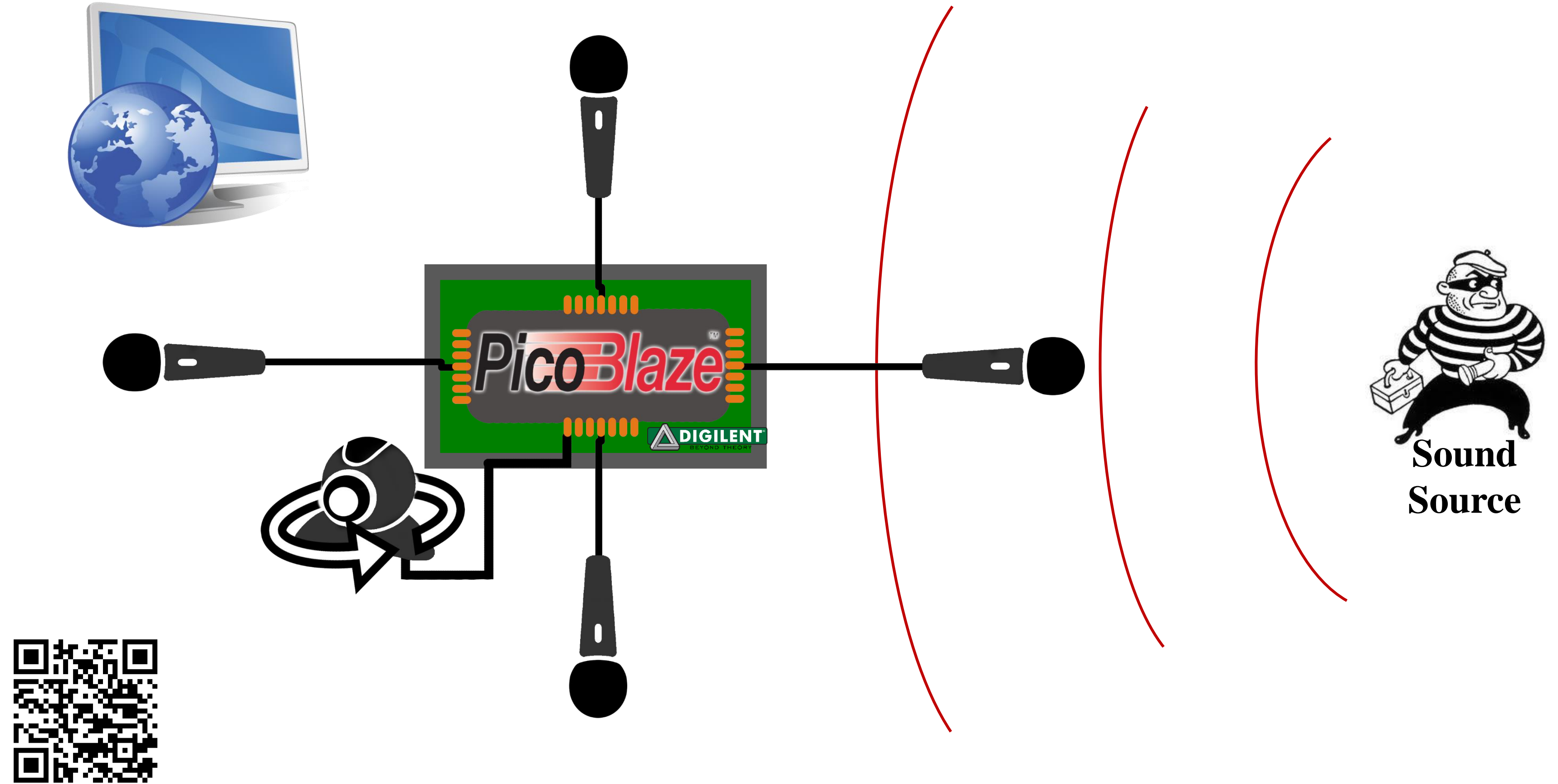
### Purpose of the Project:

Detection of sound in the environment and sending its location to the user. After that, taking a photograph of the sound source and storing it for other advanced projects.

### Future Work

1. The project can be improved with adding an FPGA compatible camera to transmit real-time image over internet.
2. The algorithm can be improved to further enhance the sensitivity of detection angle.

### System Overview



### Design Methodology

- The four microphones always listen to the environment from four different directions.
- An SPI controlled ADC converts microphones outputs to digital signals and transmits to the PicoBlaze via FPGA.
- PicoBlaze checks whether a considerable sound source around (Is security zone violated?).
- If there is, the stepper motor turns camera platform in the direction of the sound source and PicoBlaze triggers the camera.
- The camera takes photograph of the object that caused the sound.
- User informed about the violation and its direction via web page over internet.