Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Arduino board	• Arduino board which helps us connect LED and PIR sensor
FR-2	Database	• IBM cloud foundry to store information obtained from the sensor such that we can manage catalog for repeated usage (SOS)
FR-3	User Interface	• User login (application for authorities)
FR-4	Testing	• With the help of API testing, we can identify if our device can detect an obstacle using IOT
FR-5	Battery life	• It depends on the weather therefore, installation of solar panels behind the sign helps power supply • Power supply from nearby transformer (7-12V)
FR-6	Structure	• Road sign that can withhold Arduino connections inside it (water proof sign board) • Compatible with LEDs

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• This device consists of an Arduino board connected with LEDs {vibrant} which glows when motion is detected by the PIR sensor
NFR-2	**Security**	• Open security for the prototype. Encrypted protocol for the SOS and Emergency database.
NFR-3	**Reliability**	• Very reliable • Easy to implement • Instant identification
NFR-4	**Performance**	• This device immediately senses motion which illuminates the LEDs. • No latency when the SOS message is deployed to the control room.
NFR-5	**Availability**	• Can be available at every illegal parking space, as it is easily implemented. • SOS deployment is available 24/7.
NFR-6	**Scalability**	• Size of the device (circuit connection) is compact and can easily fit into the signboard. • SOS device (RF Transmitter) is very minute and very responsive