

| Marketing Requirements | Engineering Requirements | Justification |
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| 1, 3 | Sensors respond to vehicles that are up to four meters away from module. | Sensors must be able to track both large and small vehicles that may be poorly centered between the lines of each parking space. |
| 7, 10 | Sensor networks update every half-minute to conserve battery power and maintain reliable data. | A good estimation of the changes in traffic movement would occur every half-minute, and with concern to the conservation of battery power, one sensor module would initiate every half-minute (at least during the daytime). |
| 9 | Module is water-resistant and survives under extreme weather conditions (-40 - 85 degrees Celsius). | Module must be able to survive changing weather patterns. |
| 5, 6 | Mobile applications must display a warning message to not use device while operating a vehicle. Project must obey traffic regulations. | Safety concerns must be acknowledged so that this application does not contribute in any way to unsafe driving practices. |
| 3, 6 | Display and mobile application should receive and update data simultaneously (within one half-minute) to prevent confusion. | Displays must be consistent with one another to prevent confusion. |
| 8, 11 | Parking spot modules should be separately addressable. The hub needs to recognize which module corresponds to which parking spot. | In order to distinguish different parking spots for displaying, the addresses of the modules must be unique. |
| 2, 3 | A battery system should last for at least four months per module. | If a battery-operated system does not last for many months, the product becomes less marketable in comparison to other designs on the market. |
| 1, 8 | A display signal to prove sensor is operating under working conditions should be available to maintenance technicians. | In order for maintenance to be simplistic, a sensor needs to be able to send out a signal that validates proper functionality. |
| 4 | Wireless node network must be able to communicate across entire parking deck to central hub to accommodate users. | Nodes must transmit data sequentially across each other in the form of a node network. |
| 2, 11 | System should be easily scalable to larger parking decks of up to 65,535 parking spaces (16-bit addressing), which requires simplistic installation of new parking spot modules. | Plug-and-play functionality with minimal setup during installation is much more attractive for commercial applications, as well as a large number of spaces supported per deck. |