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Learning Report – CAN Requirement Document



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| **Ver. Rel. No.** | **Release Date** | **Prepared. By** | **Reviewed By** | **Approved By** | **Remarks/Revision Details** |
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| 2.0 | 04-11-2020 | Neeraja Lakshmi A |  |  |  |
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# TRAFFIC SIGN RECOGNITION

Traffic-sign recognition (TSR) is a technology by which a vehicle can recognize the traffic signs put on the road e.g. "speed limit" or "children" or "turn ahead". This is part of the features collectively called ADAS. The technology is being developed by a variety of automotive suppliers. It uses image processing techniques to detect the traffic signs. The detection methods can be generally divided into color based, shape based and learning based methods.

### Requirements

Table High Level Requirements

|  |  |
| --- | --- |
| **High Level Requirements** | |
| **Requirement ID** | **Description** |
| HLR\_01 | If ignition Is on, vehicle should start. |
| HLR\_02 | Gear trackbar should vary from level 1 to level 5. |
| HLR\_03 | Accelerator should vary from 1 to 8. |
| HLR\_04 | Speedometer should vary from 0 km/hr to 220 km/hr. |
| HLR\_05 | 5 levels of brake varying from 0 to 5. |
| HLR\_06 | Fuel should decrease slowly when the ignition is On. when vehicle is moving, depending upon the speed fuel should decrease. |

Table 2 Low Level Requirements

|  |  |
| --- | --- |
| **Low Level Software Requirements** | |
| **Requirement ID** | **Description** |
| LLR\_01 | For gear 1, vehicle should move in speed 0-20 Kmph w.r.to. acceleration applied. |
| LLR\_02 | For gear 2, vehicle should move in speed 0-50 Kmph w.r.to. acceleration applied. |
| LLR\_03 | For gear 3, vehicle should move in speed 0-80 Kmph w.r.to. acceleration applied. |
| LLR\_04 | For gear 4, vehicle should move in speed 0-140 Kmph w.r.to. acceleration applied. |
| LLR\_05 | For gear 5, vehicle should move in speed 0-220 Kmph w.r.to. acceleration applied. |
| LLR\_06 | Depending upon the brake level speed should decrease gradually. |
| LLR\_07 | When School Zone button is pressed whatever maybe the speed, speed should limit to 40 Kmph and gear 3 till 500 meters. |
| LLR\_08 | When speed limit 50 button is pressed speed should limit to 50 Kmph and gear 3 till 2 km. |
| LLR\_09 | When speed limit 100 button is pressed speed should limit to 100 Kmph and gear 4 till 1.5km. |
| LLR\_10 | When Gravel button is pressed speed should limit to 10 Kmph and gear 1 till 500m. |
| LLR\_11 | When Narrow Bridge button is pressed speed should limit to 30 Kmph and gear 2 till 1km. |
| LLR\_12 | When Turn left button is pressed left indicator should turn On and speed limit to 20 Kmph and gear 2 till 500 meters. |
| LLR\_13 | When turn right button is pressed right indicator should turn On and speed limit to 20 Kmph and gear 2 till 500 meters. |
| LLR\_14 | When animal crossing button is pressed speed limit should be limit to 10 Kmph and gear 2 till 1km. |
| LLR\_15 | When Traffic signal button is pressed speed should gradually decrease to 0 Kmph. |
| LLR\_16 | When Fuel is in reserve and when filling station button is pressed vehicle should stop and fuel tank will be filled. |
| LLR\_17 | When T-junction button is pressed speed should gradually decrease to 0 Kmph. |
| LLR\_18 | When Slippery road button is pressed speed should limit to 50 Kmph and gear 3. |
| LLR\_19 | When Road Hump button is pressed speed should limit to 10 Kmph and gear 1. |
| LLR\_20 | When Y-junction button is pressed speed should gradually decrease to 0 Kmph. |