Customer Requirements Specification

**Speed Bump ML**

**ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ**

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# **Document Status:**

|  |  |  |
| --- | --- | --- |
| **Name** | PO\_SB\_CRS\_ML | |
| **Version** | V1.0 | |
| **Status** | Drafted | |
| **Author** | Abrar | |
| **Date** | [31-10-2022] | |
| **Team approval** |  |  |
| **Mentor approval** |  |  |
| **Final approval** |  |  |

## Document History:

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Author** | **Date** | **Change** |
| 1.0 | Salma | [29-10-2022] | Initial Creation |
| 1.0 | Abrar | [31-10-2022] | Adding requirements  PO\_SB\_CRS\_*00***1**-V1.0 PO\_SB\_CRS\_*00***2**-V1.0 PO\_SB\_CRS\_*00***3**-V1.0 PO\_SB\_CRS\_*00***4**-V1.0 PO\_SB\_CRS\_*00***5**-V1.0 |
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### Reference Document:

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref.number** | **Doc.Name** | **Version** | **Status** |
| 1 | PO\_SB\_CR\_ML | V1.1 | Released |

#### 

#### Project Description:

Definition:

A Deep learning model that detects the speed bumps on the road and estimates the distance between the car and the bump.

Features:

* Model that detects speed bumps on road.
* Estimate the distance between vehicle and bump.

Key Elements:

* The deep learning model shall contain algorithms for data mining.
* The deep learning model shall detect speed bumps using neural network
* The distance between the car and the bump shall be estimated.

System Context:

Diagram

Description automatically generated

CRS Requirements:

|  |  |  |  |
| --- | --- | --- | --- |
| **Req\_ID** | PO\_SB\_CRS\_*001*-V1.0 | **Covers** | PO\_SB\_CR\_*001*-V1.0 |
| **Description** | Preprocessing input data | | |

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| --- | --- | --- | --- |
| **Req\_ID** | PO\_SB\_CRS\_**002**-V1.0 | **Covers** | PO\_SB\_CR\_*001*-V1.0 |
| **Description** | Resize the data | | |

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| --- | --- | --- | --- |
| **Req\_ID** | PO\_SB\_CRS\_**003**-V1.0 | **Covers** | PO\_SB\_CR\_**002**-V1.0 |
| **Description** | the deep learning model detect the bumps | | |

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| --- | --- | --- | --- |
| **Req\_ID** | PO\_SB\_CRS\_**004**-V1.0 | **Covers** | PO\_SB\_CR\_**002**-V1.0 |
| **Description** | Deployment of the model and test it to be generalized | | |

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| --- | --- | --- | --- |
| **Req\_ID** | PO\_SB\_CRS\_**005**-V1.0 | **Covers** | PO\_SB\_CR\_**003**-V1.0 |
| **Description** | The distance between the car and the bump shall be estimated. | | |