**LED STRING ANIMATION**

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**PO5\_LSAN\_ LED STRING ANIMATION**

1. **Document History**
   1. **History Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Author** | **Data** | **Change** |
| 1.0 | Hesham - Mark - Mirna. | 23/01/2020 | * Initial creation. |
| 1.1 | Hesham - Mark - Mirna. | 29/01/2020 | * Adding Requirements. |

* 1. **Status**

Document Status**:** Proposed

1. **Project Description**

Strings of LEDs as the following structure are used to provide Tail and TI functions based on some input signals as shown in **figure 1** below.

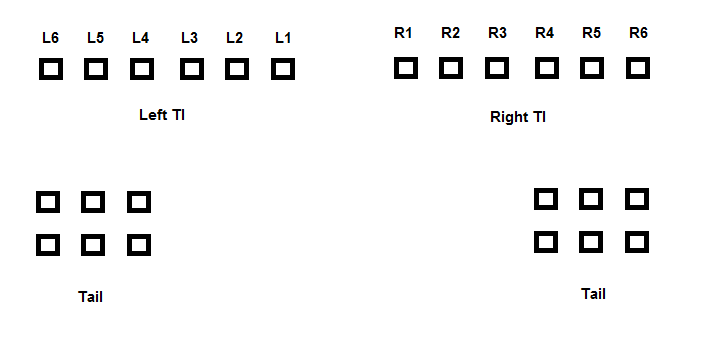
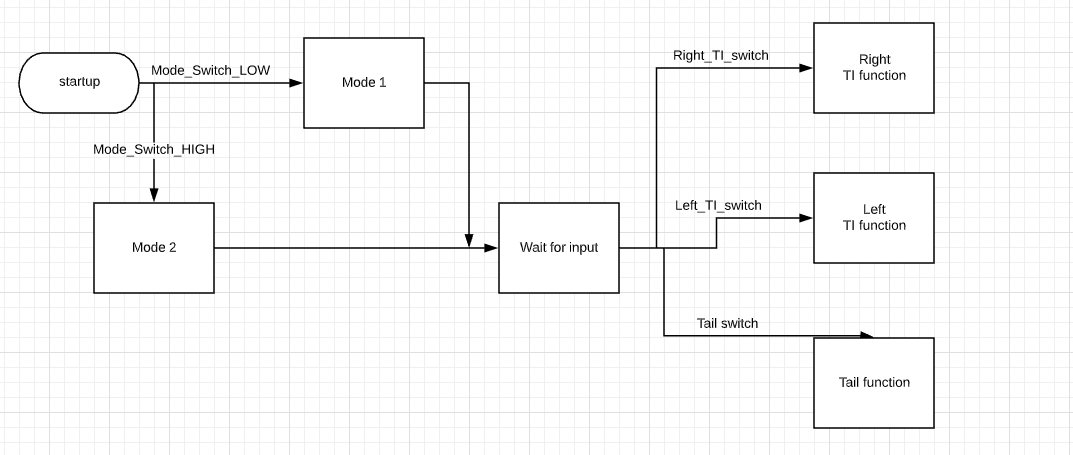


Figure 1: layout of the system

1. **Block Diagram**



1. **Features Description**
   1. **Start-Up Description**

At start up, WELCOME mode shall be one of **2 Modes** and this will be handled according to **mode switch** connected as input signal to the controller, if it's LOW enter **Mode 1** and if it's HIGH enter **Mode 2**. Modes are as the following description:

* **Mode 1:** LEDs shall be ON from L6 to L1, then from R1 to R6 and vice versa, and then all LEDs are ON and OFF.
* **Mode 2:** LEDS from R1 to R6 are ON LED by LED and also the left branch at the same time, and then repeat the scenario again.

**Start Up Requirements:-**

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_01\_V01**

When Mode switch is released, this indicates entering WELCOME MODE 1 and LEDs animation shall be as described before in Mode 1.

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_02\_V01**

When Mode switch is pressed, this indicates entering WELCOME MODE 2 and LEDs animation shall be as described before in Mode 2.

* 1. **Tail Function Description**

Tail function LEDs shall be ON when the Tail signal is HIGH level and shall be OFF when Tail signal level is LOW, activation and deactivation shall be done without any animation so simply ON all Tail LEDs when

Tail signal is HIGH and OFF them when it's LOW.

**Tail Requirements:-**

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_03\_V01**

When Tail switch is pressed, this indicates that all tail LEDs shall be ON without any animation.

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_04\_V01**

When Tail switch is released, this indicates that all tail LEDs shall be OFF without any animation.

* 1. **Turn Indicator(TI) Function Description**

TI function shall be activated/deactivated according to TI switches signals, LEDs shall be activated LED by LED from R1 to R6 or from L1 to L6 according to Right TI switch or Left TI switch respectively.

**TI Requirements:-**

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_05\_V01**

When right TI switch is pressed, right TI function shall be activated and right TI LEDs shall be animated from R1 to R6.

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_06\_V01**

When right TI switch is released, right TI function shall be deactivated.

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_07\_V01**

When left TI switch is pressed, left TI function shall be activated and left TI LEDs shall be animated from L1 to L6.

1. **Req\_ PO5\_LSAN\_ LED STRING ANIMATION\_08\_V01**

When right TI switch is released, right TI function shall be deactivated.