Assignment 10: Message Sequence Chart

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1   Message Sequence Chart

Figure 1 shows the message sequence chart for a skip sending some commands. The skip first sends a sweep hard command, which changes the LEDs on both sweeper devices. The sweeper's then interpret the LED pattern and perform the proper action. The skip then sends a clean command followed by a stop command.
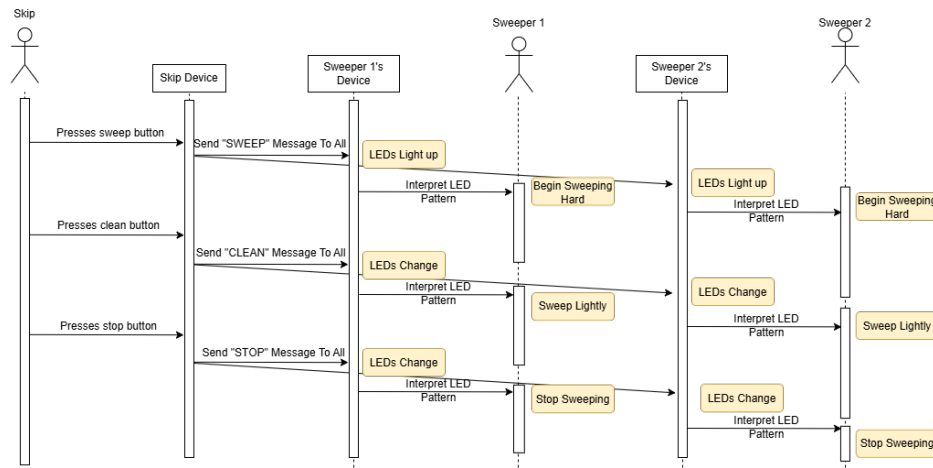

Figure 1: Message Sequence Chart

This illustrates 3 of the 5 commands. With the other 2 commands, a similar sequence would be followed, the skip presses a button, the sweeper device lights up, and the sweeper interprets the command and performs the proper action. There is no feedback from the sweeper device thus the skip does not need to wait for a response before sending the next command.

Approval:

Since ESP-NOW operates on the same frequency as WiFi, regulatory approval may be required if this device is intended for sale. In the U.S., the device would need FCC approval, while in Canada, certification from ISED would be necessary. Given its low power consumption, it would likely qualify as license-exempt, but testing is required to confirm compliance.

Further research is needed, but the ISED website outlines various certification requirements. Key regulatory standards include RSS-210[1], RSS-GEN[2], and RSS-247[3].

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[1] https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/devices-and-equipment/
radio-equipment-standards/radio-standards-specifications-rss/rss-210-licence-exempt-radio-apparatus-category-i-equipment

[2] https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/devices-and-equipment/
radio-equipment-standards/radio-standards-specifications-rss/rss-210-licence-exempt-radio-apparatus-category-i-equipment

[3] https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/devices-and-equipment/
radio-equipment-standards/radio-standards-specifications-rss/rss-247-digital-transmission-systems-dtss-frequency-hopping-system