**What is the purpose of the timerCallback() function?**

The timerCallback() function is called by the timer interrupt at regular intervals (500 ms in this case). Its primary purpose is to drive the state machine by updating the LED states according to the current message (either SOS or OK) and advancing the message sequence. This function ensures that the LEDs change state based on the predefined Morse code pattern.

**What does period mean in this context?**

In this context, the period refers to the interval at which the timer triggers the timerCallback() function. It is set to 500,000 microseconds (500 ms) and dictates the duration between each state update in the state machine. This period determines how long each dot, dash, or gap state lasts in the Morse code pattern.

**How does the Timer\_CONTINUOUS\_CALLBACK parameter impact the driver?**

The Timer\_CONTINUOUS\_CALLBACK parameter configures the timer to continuously call the callback function (in this case, timerCallback()) at each period interval (500 ms). This continuous mode ensures that the timer repeatedly triggers the state machine updates without stopping, allowing the Morse code sequence to loop continuously until the message sequence changes.

**What is gpioButtonFxn0() used for?**

The gpioButtonFxn0() function is the interrupt callback for the button press event. When the configured button is pressed, this function toggles the message type between SOS and OK by updating the BUTTON\_STATE variable. The change only takes effect after the current Morse code message completes, ensuring the integrity of the sequence.

**What is the purpose of GPIO\_CFG\_IN\_INT\_FALLING?**

GPIO\_CFG\_IN\_INT\_FALLING configures the button input pin to trigger an interrupt when the signal transitions from a high state (not pressed) to a low state (pressed). It sets up the button to respond specifically to falling edges, which indicates when the button is pressed down, allowing the program to detect and react to button presses correctly.