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/*****
Header file for ServoService
based on the Gen 2 Events and Services Framework

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#ifndef ServoService_H
#define ServoService_H

#include "ES_Types.h"
#include "ES_Configure.h"
#include "ES_Timers.h"
#include "ADS12.h"
#include <hidef.h>
#include <mc9s12e128.h>
#include <Bin_Const.h>
#include <termio.h>
#include <S12eVec.h>
#include <stdio.h>

// #define SERVO_TEST_HARNESS
#define SERVO_TEST_POT_PIN 0 // AD port used for potentiometer setpoint when testing servos

// define number of servo channels to activate
#define NUMBER_OF_SERVOS 3

// map servo channel ports and data direction registers
// Servo channel 0:
#define SERVO_0_PT PTP
#define SERVO_0_DDR DDRP
#define SERVO_0_BITHI BIT4HI
// Servo channel 1:
#define SERVO_1_PT PTP
#define SERVO_1_DDR DDRP
#define SERVO_1_BITHI BIT5HI
// Servo channel 2:
#define SERVO_2_PT PORTE
#define SERVO_2_DDR DDRE
#define SERVO_2_BITHI BIT7HI
// Servo channel 3:
#define SERVO_3_PT PORTE
#define SERVO_3_DDR DDRE
#define SERVO_3_BITHI BIT0HI
// Servo channel 4:
#define SERVO_4_PT PORTE
#define SERVO_4_DDR DDRE
#define SERVO_4_BITHI BIT7HI

// define default servo pulse widths in units of microseconds
#define SERVO_PERIOD_MICROSECONDS 20000 // Period of pulses
#define SERVO_0_DEFAULT 1500
#define SERVO_1_DEFAULT 1500
#define SERVO_2_DEFAULT 1500
#define SERVO_3_DEFAULT 1500
#define SERVO_4_DEFAULT 1500

#define MIN_PULSE_WIDTH 700
#define MAX_PULSE_WIDTH 2400

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#define TICKS_PER_MICROSECOND 1.5//assumes 24 MHz system clock divided by 16

#define UPDATE_INTERVAL 65000;

// Public Function Prototypes

bool InitServoService ( uint8_t Priority );
bool PostServoService( ES_Event ThisEvent );
ES_Event RunServoService( ES_Event ThisEvent );
void UpdateServo(unsigned char ServoChannel, uint16_t PulseWidthMicroseconds);

#endif /* ServoService_H */
```