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/*****
Template header file for Hierarchical State Machines AKA StateCharts
02/08/12 adjustments for use with the Events and Services Framework Gen2
3/17/09 Fixed prototypes to use Event_t
*****/

#ifndef ShootingSM_H
#define ShootingSM_H

// typedefs for the states
// State definitions for use with the query function
typedef enum { Out_of_Balls, Loaded, Firing } TemplateState_t ;

// Public Function Prototypes

ES_Event RunShootingSM( ES_Event CurrentEvent );
void StartShootingSM ( ES_Event CurrentEvent );
void StopShootingSM ( ES_Event CurrentEvent );
TemplateState_t QueryShootingSM ( void );
unsigned char Query_Ammo( void );
void Add_Ammo( unsigned char new_balls);

// #define variables
#define LOADING_SERVO_CHANNEL 0
#define FIRING_SERVO_CHANNEL 1
#define LOADING_SERVO_OPEN_POSITION 960
#define LOADING_SERVO_CLOSED_POSITION 1990
#define FIRING_SERVO_OPEN_POSITION 880
#define FIRING_SERVO_CLOSED_POSITION 1920
#define GATE_TIMER 4
#define GATE_UP_INTERVAL_MS 1000
#define PITCH_MOTOR_PWM_PERIOD 150 //assumes divide by 16 scaling of 24 MHz system clock
#define PITCH_MOTOR_PWM_DTY 90
#define PITCH_MOTOR_CONTROL_INTERVAL 30000 //20 ms control loop iteration, assumes divide
by 16 scaling of 24 MHz system clock
#define DEFAULT_PITCH_WHEEL_RPM 2000

#define FIRING_TEST_HARNESS
#define FIRE_UPDATE_INTERVAL 45000
#define PITCHING_TEST_POT_PIN 0
#define MIN_DUTY_CYCLE_FRACTION 0.6

// #define PRINT_SHOOTING_SM_CALLS
// #define PRINT_SHOOTING_SM_STATES

#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>

#include "MasterHSM.h"
#include "ServoService.h"

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#endif /*ShootingSM_H */
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