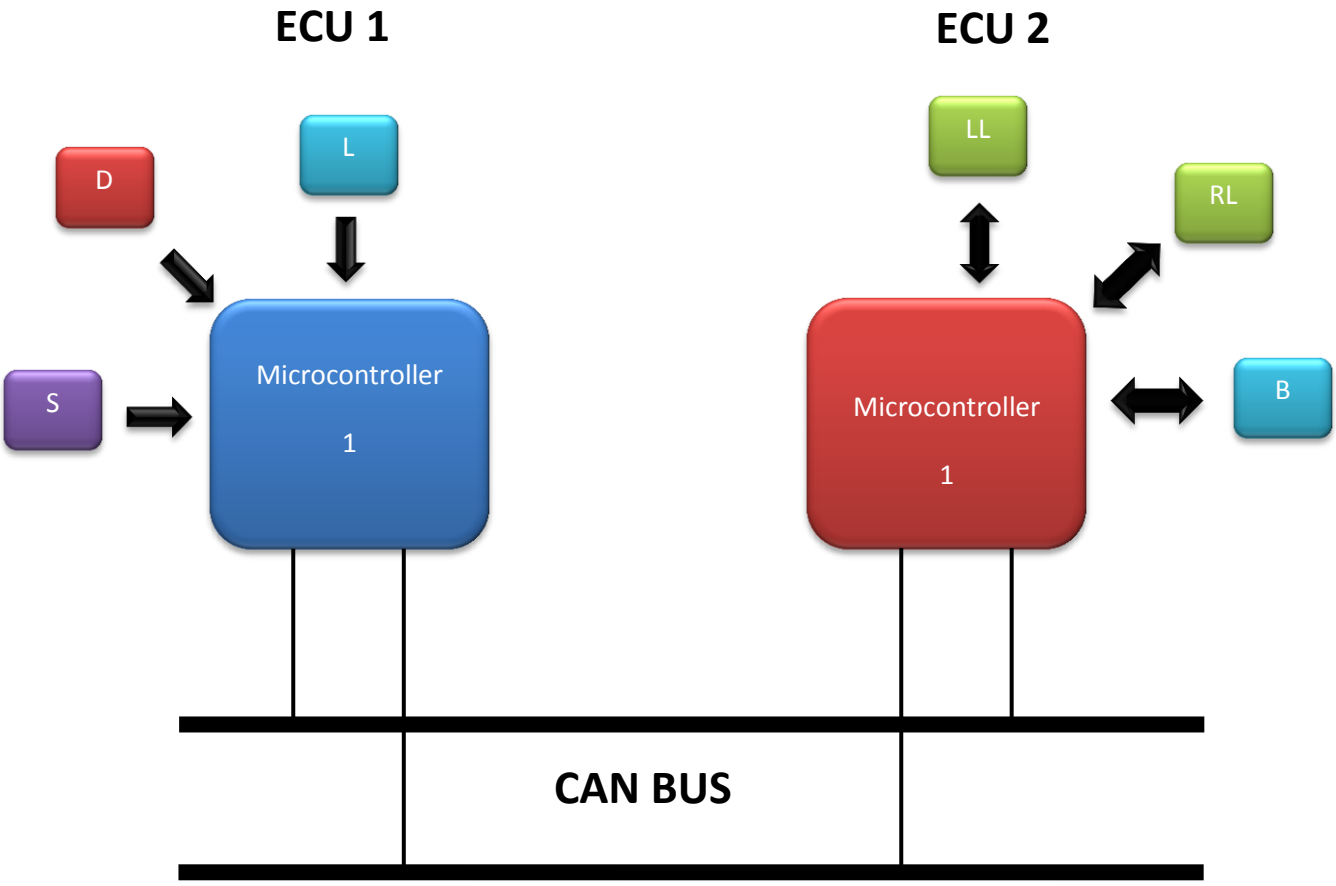
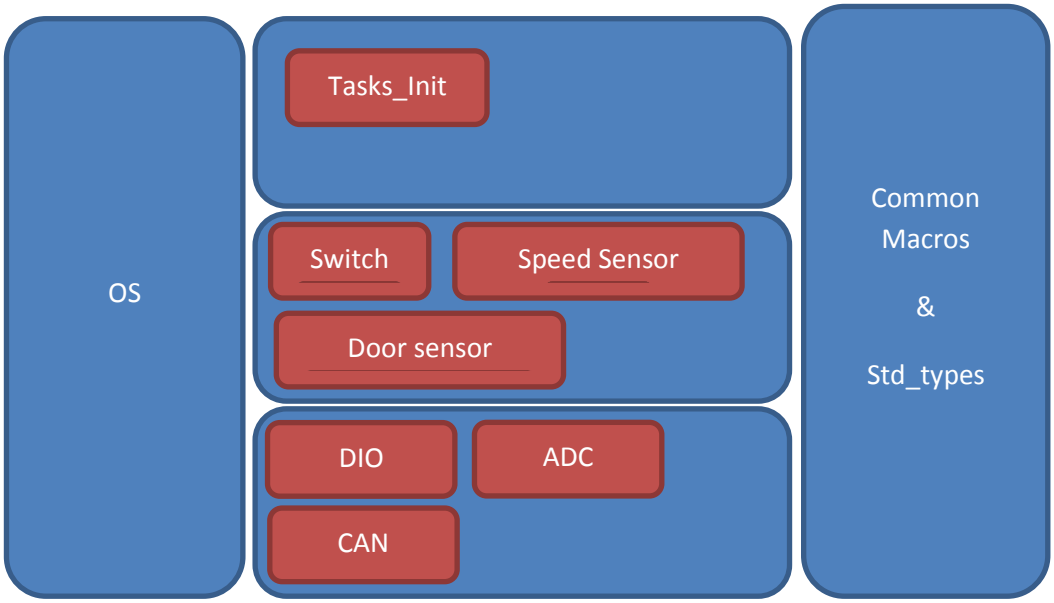
Block Diagram





DIO APIs

Function Name	DIO_Init(u8 Copy_u8Port, u8 Copy_u8Pin, u8 Copy_u8PinDir)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
		Copy_u8PinDir	u8
		Description: Pin Direction	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Digital input output Pin initialization		

Function Name	DIO_Write(u8 Copy_u8Port, u8 Copy_u8Pin, u8 Copy_u8PinValue)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
		Copy_ u8PinValue	u8
		Description: Pin Value	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Set Pin Value		

Function Name	DIO_Read(u8 Copy_u8Port, u8 Copy_u8Pin)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Pin_u8Value		
Description	Read Pin Value		

Name	Copy_u8Port	Copy_u8Pin	Copy_u8PinDir	Copy_u8PinValue	Copy_u8Value
Type	uint_8	uint_8	uint_8	uint_8	uint_8
Range	0 : 255	0 : 255	0 : 255	0 : 255	0 : 255
Description	Port number	Pin Number	Pin direction	Pin write Value	Pin return State

ADC APIs

Function Name	ADC_Init(u8 Copy_u8Channel)		
Arguments	Inputs	Copy_u8Port	u8
		Description: chosen channel	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Initialize ADC channel		

Function Name	ADC_Read(u8 Copy_u8Channel)		
Arguments	Inputs	Copy_u8Port	u8
		Description: chosen channel	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Channel_Value		
Description	Read ADC channel Value		

Name	Copy_u8Channel	Channel_Value
Type	uint_8	uint_8
Range	0 : 255	0 : 255
Description	ADC channel number	Channel return value

CAN APIs

Function Name	CAN_Init( )		
Arguments	Inputs	N/A	
		Description:	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Initialize CAN peripheral		

Function Name	CAN_Send(u8 Copy_u8Data)		
Arguments	Inputs	Copy_u8Data	u8
		Description: Data Byte to be transmitted	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Send Byte of data via CAN module		

Name	Copy_u8Data
Type	uint_8
Range	0 : 255
Description	Data Transmitted via CAN peripheral

Switch APIs

Function Name	Switch_GetState(u8 Copy_u8Port, u8 Copy_u8Pin)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Switch_State		
Description	Get state of the switch		

Door Sensor API

Function Name	Door_GetState(u8 Copy_u8Port, u8 Copy_u8Pin)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Door_State		
Description	Get state of the Door		

Speed Sensor API

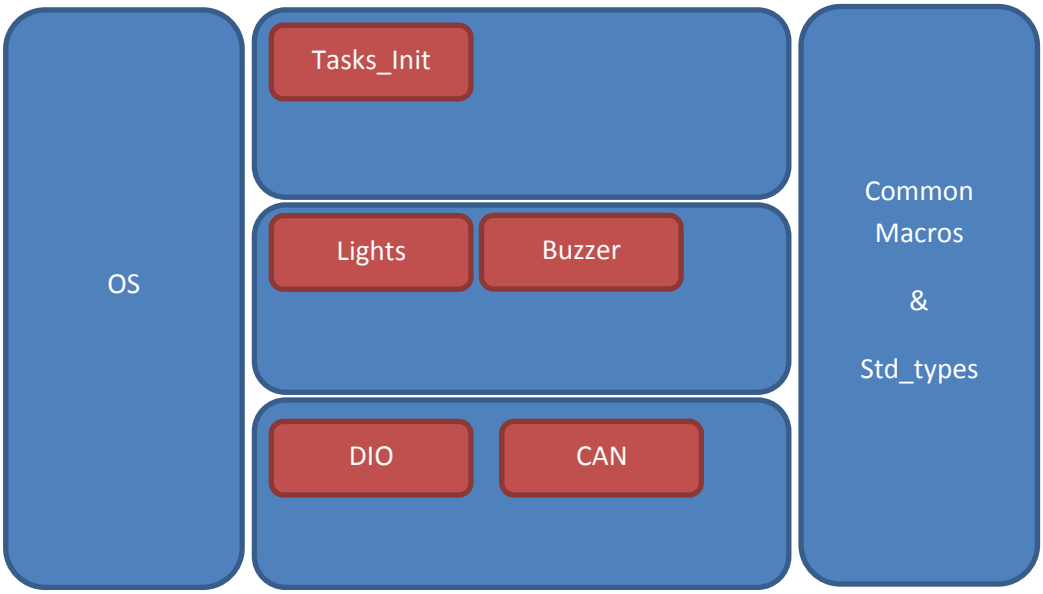
Function Name	**Speed_GetValue(u8 Copy_u8Channel)**		
Arguments	**Inputs**	Copy_u8Channel	u8
		Description: ADC channel connected to Sensor	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Speed_Value		
Description	Get Speed of the Car		

Name	**Copy_u8Port**	**Copy_u8Pin**	**Switch_State**	**Door_State**	**Copy_u8Channel**	**Speed_Value**
Type	uint_8	uint_8	uint_8	uint_8	uint_8	uint_8
Range	0 : 255	0 : 255	0 : 255	0 : 255	0 : 255	0 : 255
Description	Port number	Pin Number	Light Switch state	Door State	ADC channel	Returned Speed value

Application API

Function Name	Tasks_Init( )		
Arguments	Inputs	N/A	
		Description:	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Create Tasks		

ECU 2



DIO APIs

Function Name	DIO_Init(u8 Copy_u8Port, u8 Copy_u8Pin, u8 Copy_u8PinDir)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
		Copy_u8PinDir	u8
		Description: Pin Direction	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Digital input output Pin initialization		

Function Name	DIO_Write(u8 Copy_u8Port, u8 Copy_u8Pin, u8 Copy_u8PinValue)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
		Copy_ u8PinValue	u8
		Description: Pin Value	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Set Pin Value		

Function Name	DIO_Read(u8 Copy_u8Port, u8 Copy_u8Pin)		
Arguments	Inputs	Copy_u8Port	u8
		Description: Port Number	
		Copy_u8Pin	u8
		Description: Pin Number	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Pin_u8Value		
Description	Read Pin Value		

Name	Copy_u8Port	Copy_u8Pin	Copy_u8PinDir	Copy_u8PinValue	Copy_u8Value
Type	uint_8	uint_8	uint_8	uint_8	uint_8
Range	0 : 255	0 : 255	0 : 255	0 : 255	0 : 255
Description	Port number	Pin Number	Pin direction	Pin write Value	Pin return State

CAN APIs

Function Name	CAN_Init( )		
Arguments	Inputs	N/A	
		Description:	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Initialize CAN peripheral		

Function Name	CAN_Receive( )		
Arguments	Inputs	N/A	
		Description:	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Received_Data		
Description	Receive Byte of data via CAN module		

Name	Received_Data
Type	uint_8
Range	0 : 255
Description	Data Received via CAN peripheral

Lights APIs

Function Name	Lights_SetState(u8 Copy_u8Lights_State)		
Arguments	Inputs	Copy_u8Lights_State	u8
		Description: Lights (right and left) State	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Set Lights state		

Function Name	Lights_GetState( )		
Arguments	Inputs	N/A	
		Description:	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	Lights_State		
Description	Read lights state		

Buzzer API

Function Name	Buzzer_SetState(u8 Copy_u8Buzzer_State)		
Arguments	Inputs	Copy_ u8Buzzer_State	u8
		Description: Buzzer State	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Set Buzzer state		

Name	Copy_u8Lights_State	Light_State	Copy_u8Buzzer_State
Type	uint_8	uint_8	uint_8
Range	0 : 255	0:255	0 : 255
Description	Lights State input	Holds light state return	Buzzer state

Application API

Function Name	Tasks_Init( )		
Arguments	Inputs	N/A	
		Description:	
	Outputs	N/A	
		Description:	
	Inputs/Outputs	N/A	
		Description:	
Return	E_OK	0	
	E_NOK	1	
Description	Create Tasks		