AIRBAG CONTROL UNIT

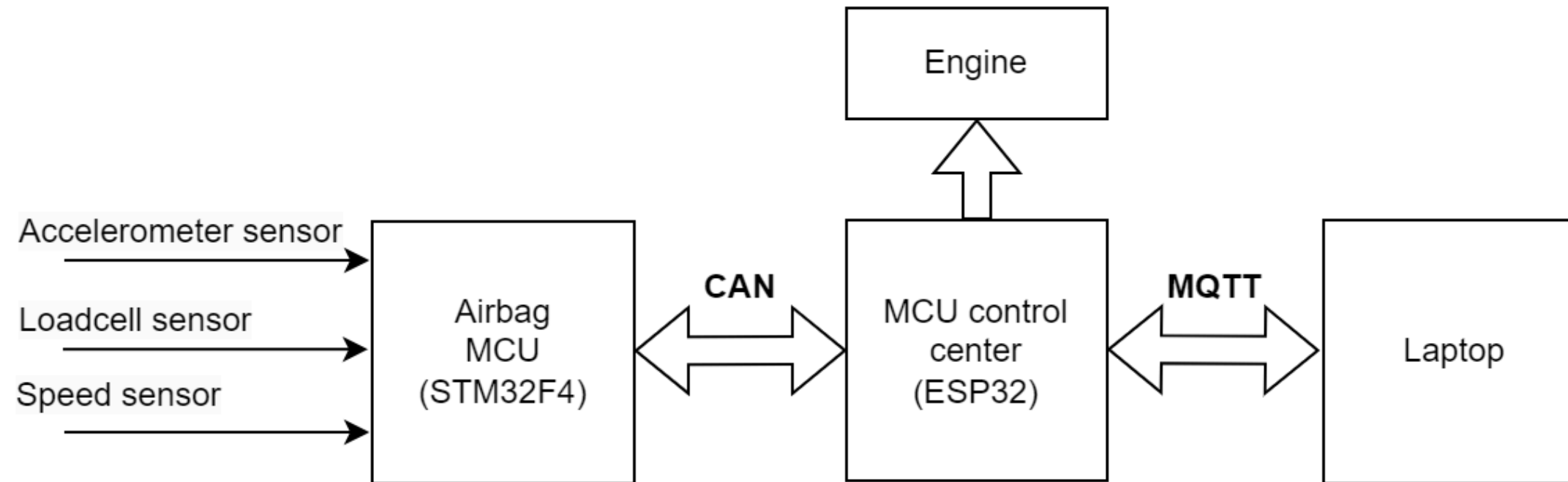## Block of system

- Handle sensor data.
- Control implementation of airbag signal.

- Tranfer data from Airbag MCU to Laptop.
- Control engine by signal from laptop.

- Handle data to modification sensor to get activation condition.
- Evaluate results of system.

Hardware

Board Stm32f407 (Accelerometer sensor)

Esp32

Wheel speed rotation sensor
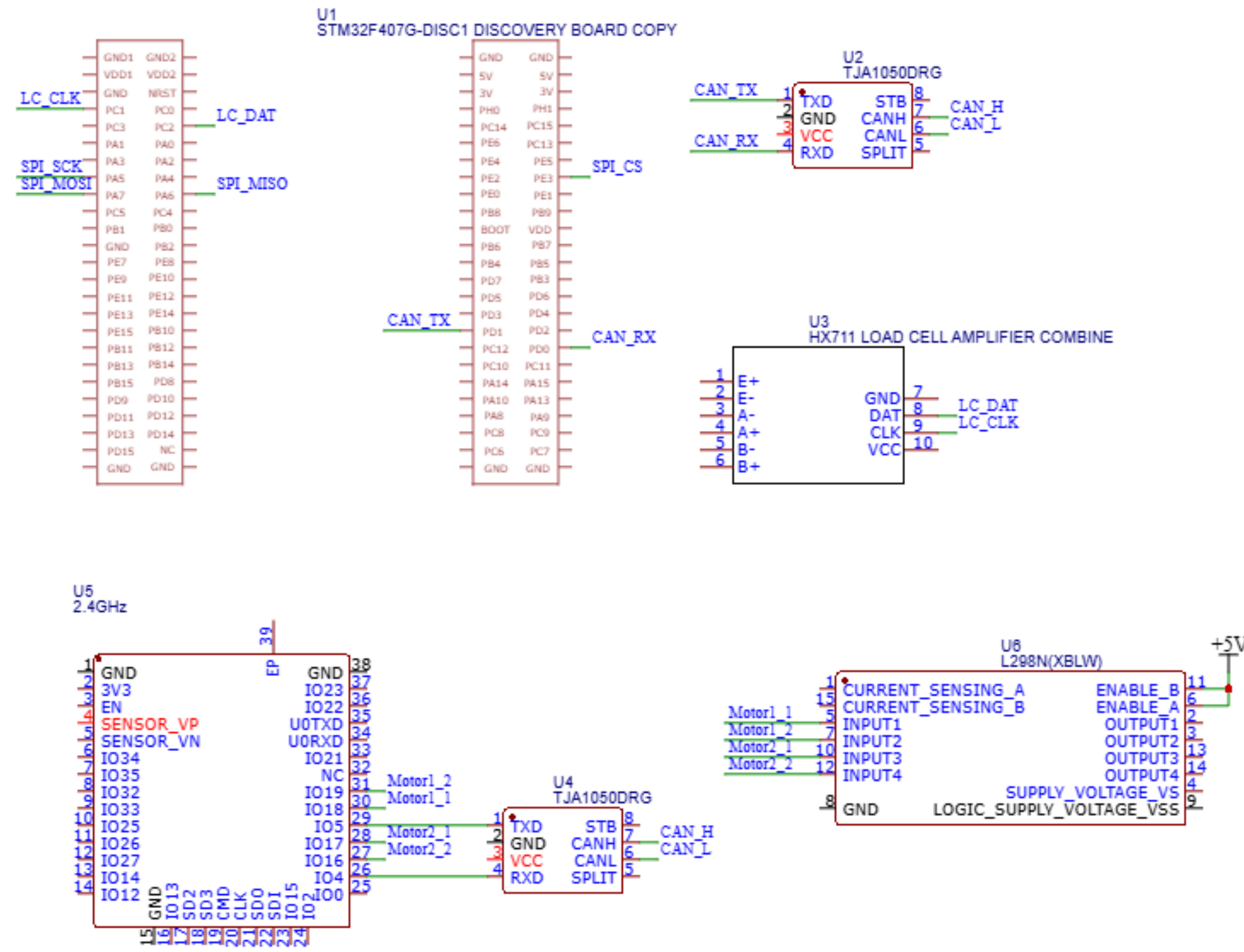
Module CAN

Weight sensor

Battery

L298 Motor driver

Vehicle frame

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Schematic

U1
STM32F407G-DISC1 DISCOVERY BOARD COPY

GND1	GND2
VDD1	VDD2
GND	NRST
PC1	PC0
PC3	PC2
PA1	PA0
PA3	PA2
PA5	PA4
PA7	PA6
PC5	PC4
PB1	PB0
GND	PB2
PE7	PE8
PE9	PE10
PE11	PE12
PE13	PE14
PE15	PB10
PB11	PB12
PB13	PB14
PB15	PD8
PD9	PD10
PD11	PD12
PD13	PD14
PD15	NC
GND	GND

LC_CLK
LC_DAT
SPI_SCK
SPI_MOSI
SPI_MISO

GND	GND
5V	5V
3V	3V
PH0	PH1
PC14	PC15
PE6	PC13
PE4	PE5
PE2	PE3
PE0	PE1
PB8	PB9
BOOT	VDD
PB6	PB7
PB4	PB5
PD7	PB3
PD5	PD6
PD3	PD4
PD1	PD2
PC12	PD0
PC10	PC11
PA14	PA15
PA10	PA13
PA8	PA9
PC8	PC9
PC6	PC7
GND	GND

SPI_CS
CAN_TX
CAN_RX

U2
TJA1050DRG

1 TXD	STB 8	CAN_H
2 GND	CANH 7	CAN_L
3 VCC	CANL 6	
4 RXD	SPLIT 5	

CAN_TX
CAN_RX
CAN_H
CAN_L

U3
HX711 LOAD CELL AMPLIFIER COMBINE

1 E+		
2 E-	GND 7	
3 A-	DAT 8	LC_DAT
4 A+	CLK 9	LC_CLK
5 B-	VCC 10	
6 B+		

U5
2.4GHz

EP 39

1 GND	GND 38
2 3V3	IO23 37
3 EN	IO22 36
4 SENSOR_VP	U0TXD 35
5 SENSOR_VN	U0RXD 34
6 IO34	IO21 33
7 IO35	NC 32
8 IO32	IO19 31
9 IO33	IO18 30
10 IO25	IO5 29
11 IO26	IO17 28
12 IO27	IO16 27
13 IO14	IO4 26
14 IO12	IO0 25

GND IO13 SD2 SD3 CMD CLK SD0 SD1 IO15 IO2
15 16 17 18 19 20 21 22 23 24

Motor1_2
Motor1_1
Motor2_1
Motor2_2

U4
TJA1050DRG

1 TXD	STB 8	CAN_H
2 GND	CANH 7	CAN_L
3 VCC	CANL 6	
4 RXD	SPLIT 5	

U6
L298N(XBLW)

+5V

4 CURRENT_SENSING_A	ENABLE_B 11
15 CURRENT_SENSING_B	ENABLE_A 6
5 INPUT1	OUTPUT1 2
7 INPUT2	OUTPUT2 3
10 INPUT3	OUTPUT3 13
12 INPUT4	OUTPUT4 14
	SUPPLY_VOLTAGE_VS 4
8 GND	LOGIC_SUPPLY_VOLTAGE_VSS 9

Motor1_1
Motor1_2
Motor2_1
Motor2_2