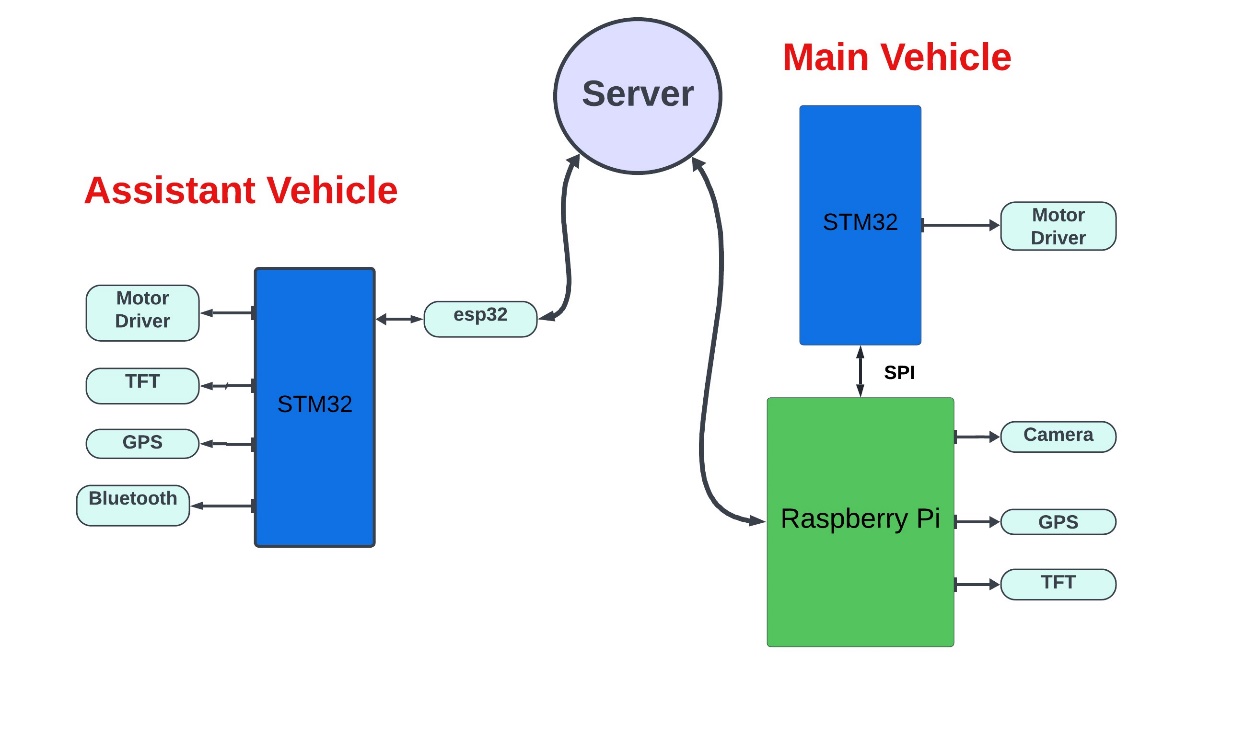
FU\_ES

Ahmedamr7787@gmail.com

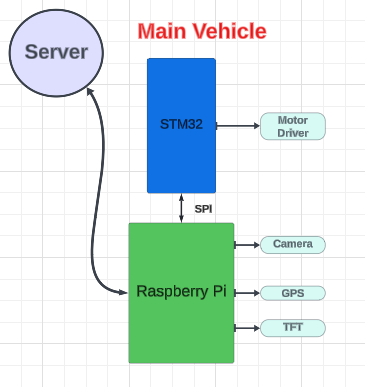
**v2v**

System Requirements

* **System Design**
* Main Vehicle
* Assistant Vehicle



* **Main Vehicle**



**Needed Functions:**

**Vehicle Motion**

void HMOTOR\_voidInit (void);

void HMOTOR\_voidStop (void);

void HMOTOR\_voidMoveForward (uint16\_t Copy\_uint16Speed);

void HMOTOR\_voidMoveBackward (uint16\_t Copy\_uint16Speed);

void HMOTOR\_voidMoveRight (uint8\_t Copy\_uint8SDirection);

void HMOTOR\_voidMoveLeft (uint8\_t Copy\_uint8SDirection);

**Connection between STM and Raspberry pi (Using SPI1)**

HAL\_StatusTypeDef HAL\_SPI\_Init(SPI\_HandleTypeDef \*hspi);

HAL\_StatusTypeDef HAL\_SPI\_Transmit\_IT(SPI\_HandleTypeDef \*hspi, uint8\_t \*pData, uint16\_t Size);

HAL\_StatusTypeDef HAL\_SPI\_Receive\_IT(SPI\_HandleTypeDef \*hspi, uint8\_t \*pData, uint16\_t Size);

**Interfacing with the Camera**

void HCamera\_voidInit (void);

void HCamera\_voidGetImage (uint16\_t \*Copy\_ uint16pictureData);

**Interfacing with the TFT**

void HTFT\_voidInit (void);

void HTFT\_voidDisplayImage (const uint16\_t \*Copy\_ uint16pictureData);

void HTFT\_voidFillColor (u16 Copy\_u16Color);

void HTFT\_voidDrawShape (Shape Dimensions);

**Interfacing with the WIFI**

void ESP\_voidInit (void);

void ESP\_voidConnectToWifi (u8 \*Copy\_Pu8WifiName , u8 \*Copy\_Pu8WifiPassword);

void ESP\_voidConnectToServer (u8 \*Copy\_Pu8ServerIP);

void ESP\_voidWriteData (u8 \*Copy\_Pu8Data , Path);

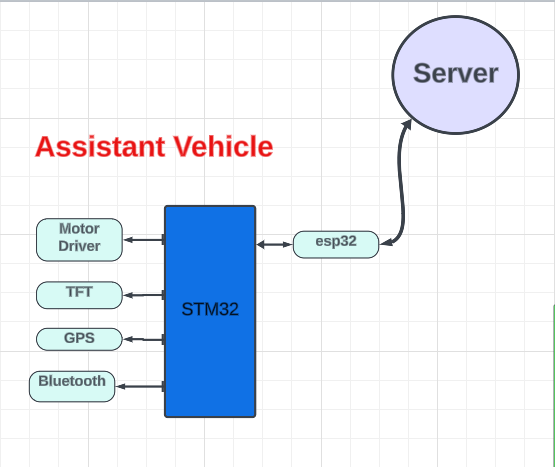
void ESP\_voidReadData (u8 \*Copy\_Pu8Data , Path);

**Interfacing with the GPS**

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……………

* **Assistant Vehicle**



**Needed Functions:**

**Vehicle Motion**

void HMOTOR\_voidInit (void);

void HMOTOR\_voidStop (void);

void HMOTOR\_voidMoveForward (uint16\_t Copy\_uint16Speed);

void HMOTOR\_voidMoveBackward (uint16\_t Copy\_uint16Speed);

void HMOTOR\_voidMoveRight (uint8\_t Copy\_uint8SDirection);

void HMOTOR\_voidMoveLeft (uint8\_t Copy\_uint8SDirection);

**Interfacing with the TFT**

void HTFT\_voidInit (void);

void HTFT\_voidDisplayImage (const uint16\_t \*Copy\_ uint16pictureData);

void HTFT\_voidFillColor (u16 Copy\_u16Color);

void HTFT\_voidDrawShape (Shape Dimensions);

**Interfacing with the WIFI**

void ESP\_voidInit (void);

void ESP\_voidConnectToWifi (u8 \*Copy\_Pu8WifiName , u8 \*Copy\_Pu8WifiPassword);

void ESP\_voidConnectToServer (u8 \*Copy\_Pu8ServerIP);

void ESP\_voidWriteData (u8 \*Copy\_Pu8Data , Path);

void ESP\_voidReadData (u8 \*Copy\_Pu8Data , Path);