

# Bicom system

## Abstract

Bicom system is the extension of the unidirectional RKE to bidirectional ke system. This system is used for checking window status,checking alarm status,battery information and door status..As the demand for vehicles grows, so does the number of thefts, making it necessary to secure our vehicles against theft.So this has been implemented.

## **Table of contents**

<b>Introduction</b>	<b>3</b>
<b>Requirements</b>	<b>3</b>
<b>High Level Requirements</b>	<b>3</b>
Low Level Requirements	4
5W's and 1h	5
<b>Architecture</b>	<b>6</b>
<b>Block diagram</b>	<b>6</b>
UML Diagrams	7
Behavioral diagram	7
Structural Diagram	8
<b>Implementation</b>	<b>9</b>
<b>TEST PLAN AND OUTPUT</b>	<b>10</b>
<b>High level test plan</b>	<b>10</b>
Low level test plan	10
<b>Applications</b>	<b>11</b>

# Introduction

## Identifying features

- If we click Button for once the system will check window status.
- If we click the Button twice the system will check the alarm status .
- If we click the Button three times the system will get the battery information.
- If we click the Button for Four times, it will check the door status .

## Requirements

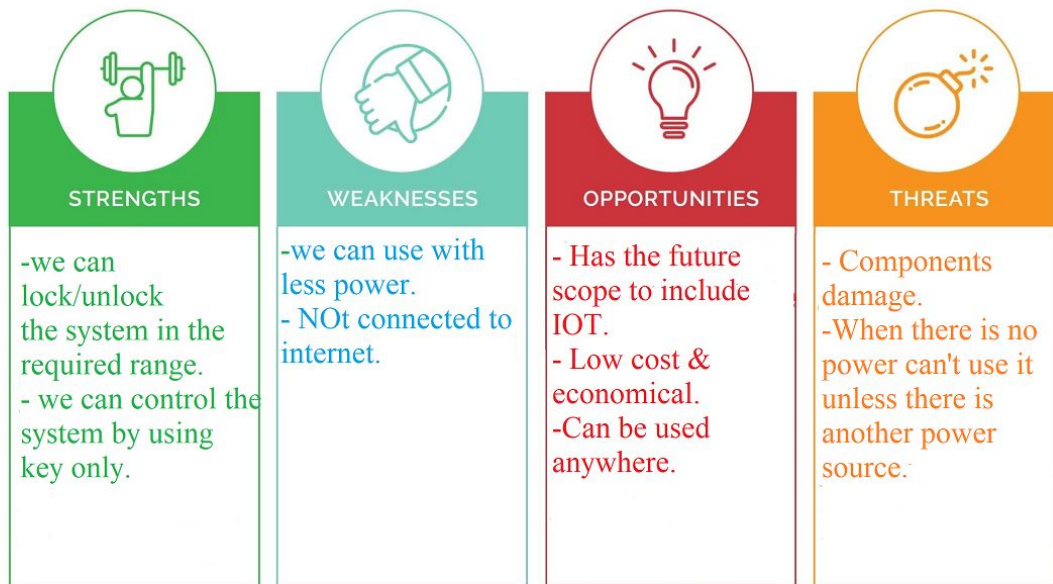
### High Level Requirements

ID	Description
HLR01	The system shall check window status
HLR02	It shall check alarm status
HLR03	It shall get battery information
HLR04	It shall check door status

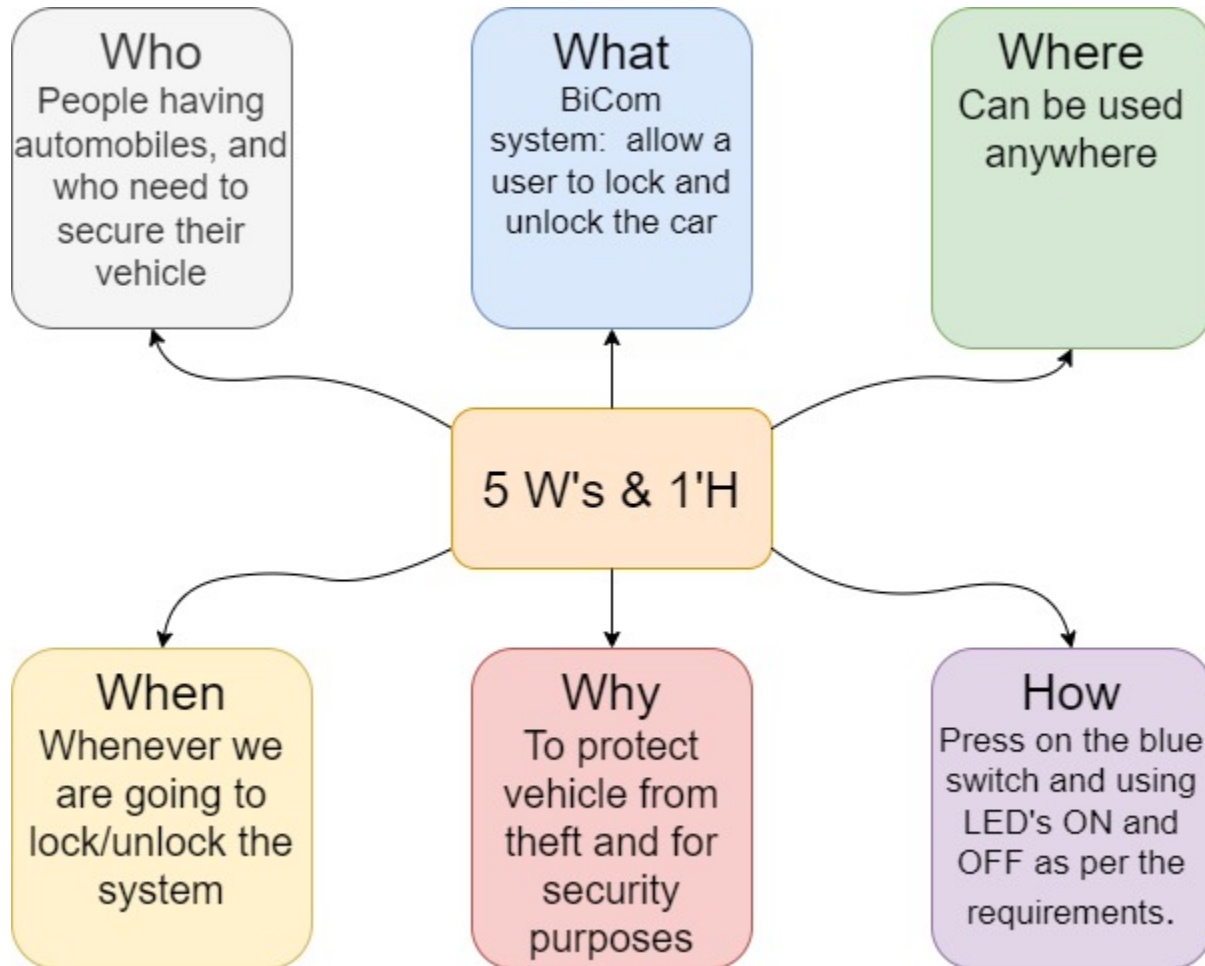
## Low Level Requirements

ID	Description
LLR01	The system should check window status the when blue switch is pressed once
LLR02	The system should check alarm status when the blue switch is pressed twice
LLR03	The system should It shall get the battery information when the blue switch is pressed three times
LLR04	The system should check the door status when the blue switch is pressed four times

## SWOT ANALYSIS

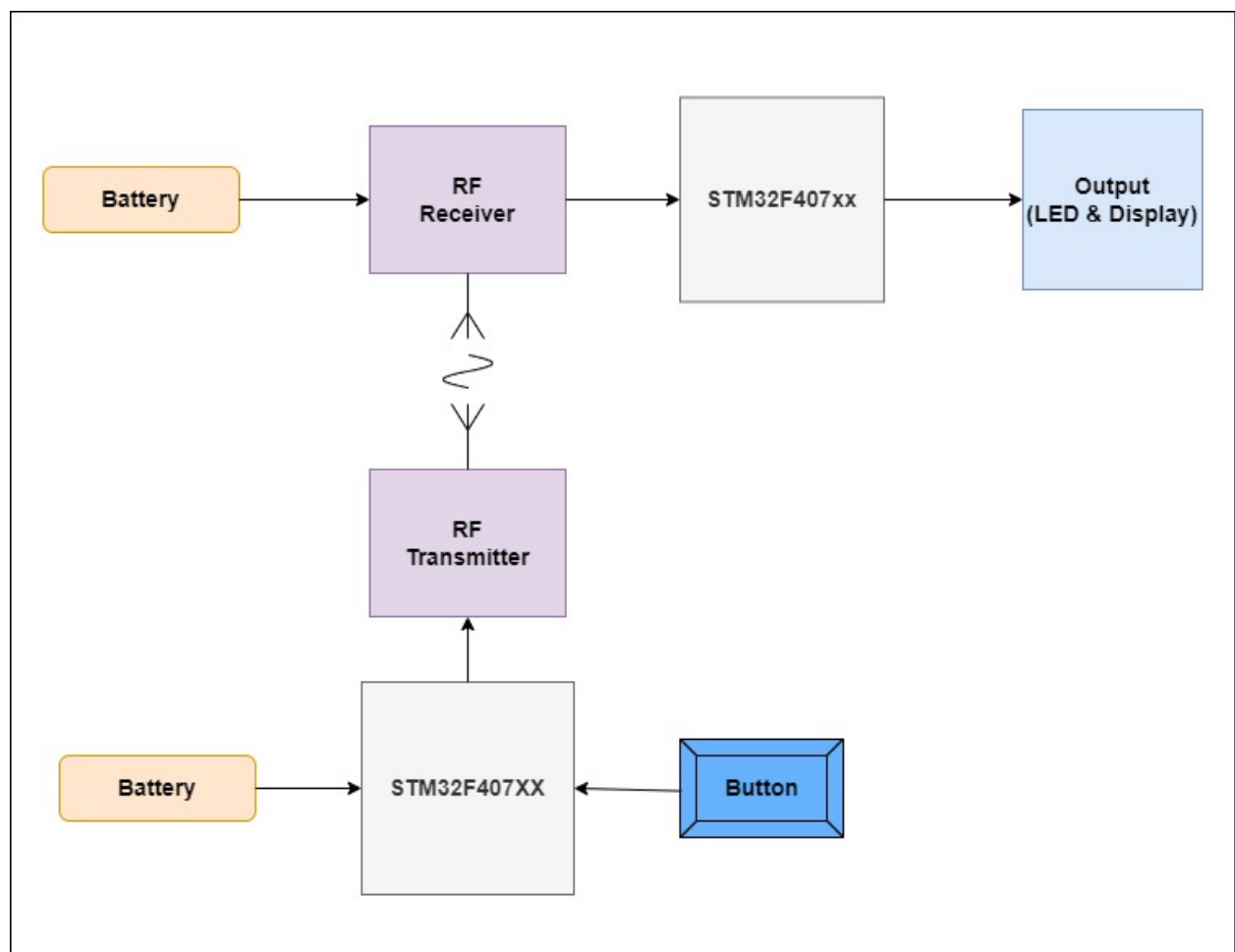


## 5W's and 1h



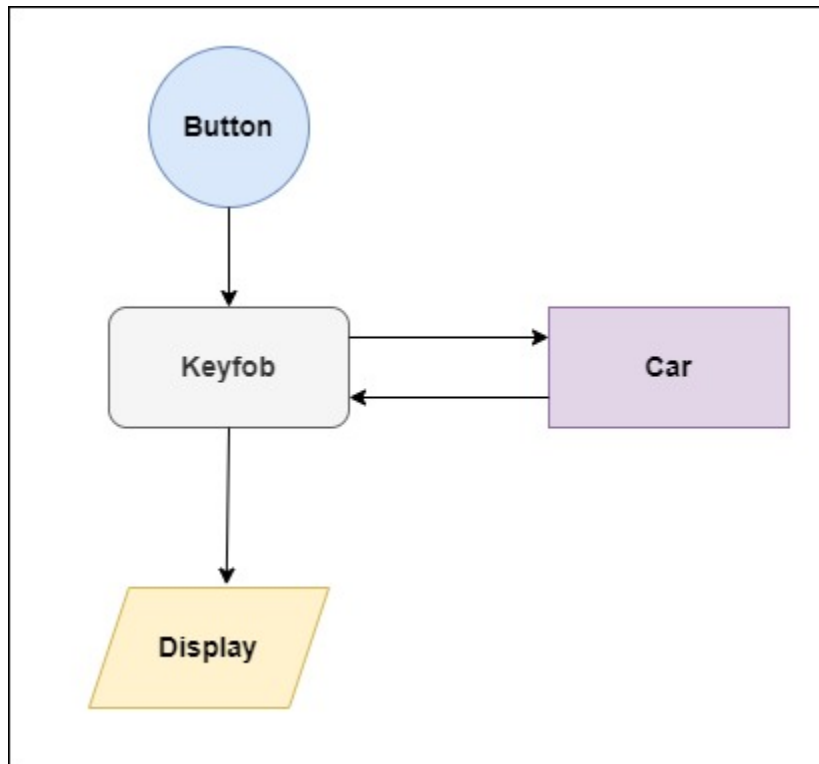
## Architecture

### Block diagram

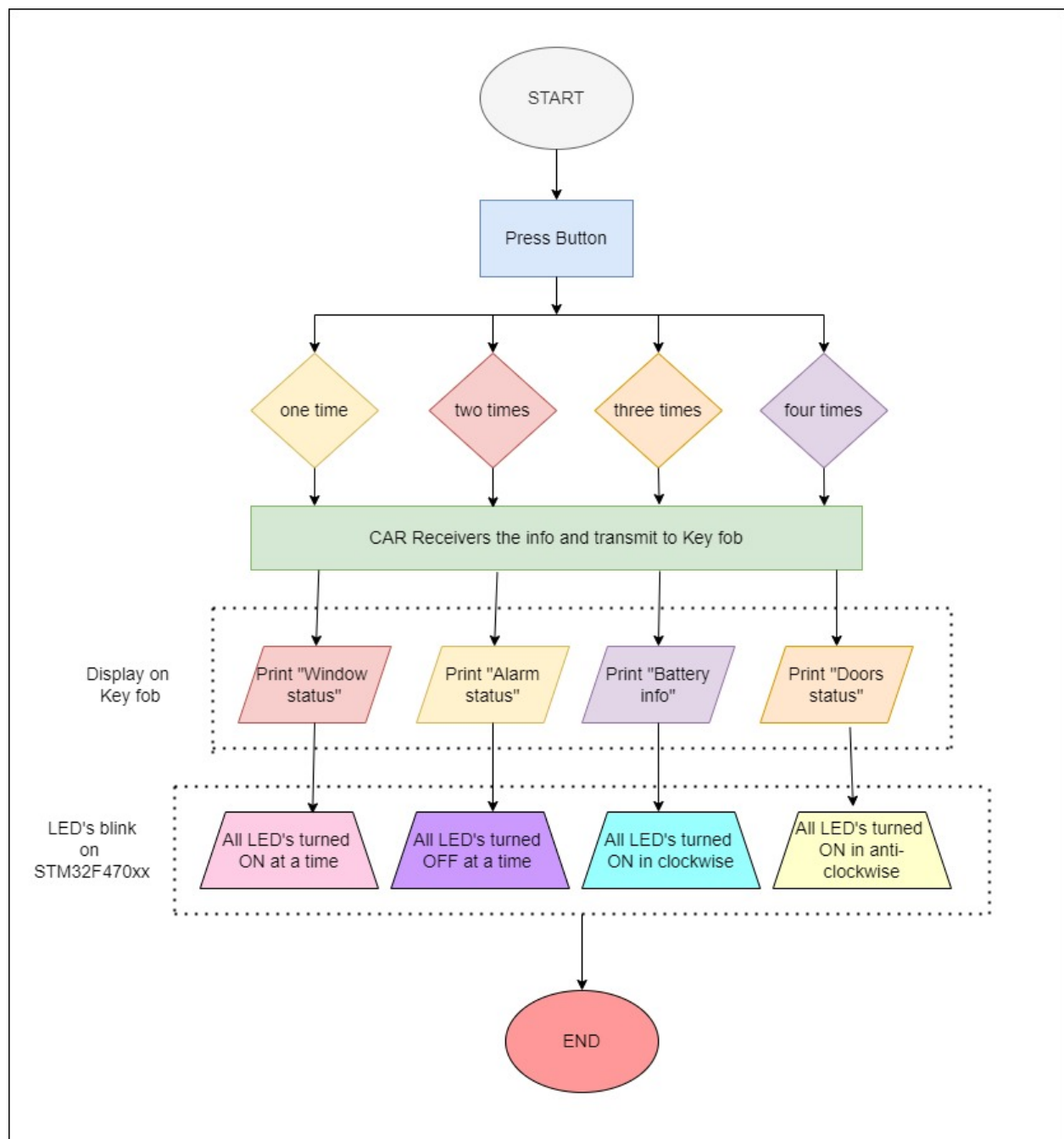


# UML Diagrams

## Behavioral diagram



## Structural Diagram





## Implementation

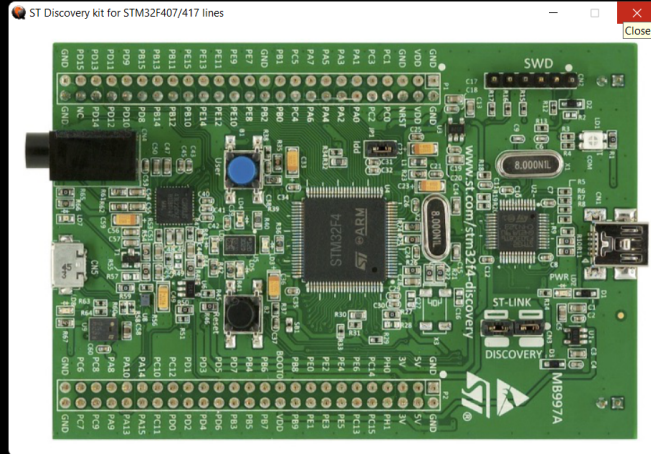
```

C:\MTH\BTLAPTOP>TO3RUEPM ~
$ cd "E:\LTTSS\Module - 3\ProjectM3"

C:\MTH\BTLAPTOP>TO3RUEPM /cydrive/e/LTTSS/Module - 3/ProjectM3
$ make all
arm-none-eabi-gcc -c -mcpu=cortex-m4 -lmdb -stdgnu11 -Wall -O0 -o main.o main.c
arm-none-eabi-gcc -nostdlib -lstm32f4 -lstd -o finalled.exe main.o MySTM32F407xx_gpio_driver.o stm32_startup.o

C:\MTH\BTLAPTOP>TO3RUEPM /cydrive/e/LTTSS/Module - 3/ProjectM3
$ qemu-system-gnuarmclisp.exe -M STM32F4-Discovery -mcpu STM32F407VG -kernel finalled.elf

```



A photograph of an STM32F407/417 line development board, specifically the M8997A model. The board is green and populated with various components including a large black STM32F407VGT6 microcontroller, a blue ST-Link/V2 debugger, a USB Type-A connector, a USB Type-C connector, a 3.5mm audio jack, and several push buttons. The board features a dense array of pins along the edges, labeled with pin numbers and functions. The ST logo and 'M8997A' are visible on the bottom right. The board is shown against a black background.

# TEST PLAN AND OUTPUT

## High level test plan

Test ID	Description	Input	Expected output	Actual output	status
TID_01	Window status	Press button one time	Pass	Pass	Done
TID_02	Alarm status	Press button two times	Pass	Pass	Done
TID_03	Car battery information	Press button three times	Pass	Pass	Done
TID_04	Door status	Press button four times	Pass	Pass	Done

## Low level test plan

-

Test ID	Description	Input	Expected output	Actual output	status
TID_01	Window status	Press button one time	All led's on	All led's on	Done
TID_02	Alarm status	Press button two times	All led's off	All led's off	Done
TID_03	Car battery information	Press button three times	All led's on clockwise	All led's on clockwise	Done
TID_04	Door status	Press button four times	All led's on anticlockwise	All led's on anticlockwise	Done

# Applications

- The point of the project is to use a wireless key to control the system and it gives the status of the system.
- Machine security, as well as when users want to secure their cars, will be aided by wireless keys.
- We can make use of vehicle parking spaces.
- Bicom are also used to control entry to premises and specific areas of buildings, such as garages.