Tracuz BLE Communication Protocol

**Phone to bag:**

1. Predefined Animation/Frame Select:

**Function**: To select a predefined animation/frame to display on the bag. Animation\_id is for showing which animation ID is selected, each animation has one number. Display\_mode has two things 1 for making the animation scrolling and 0 for static.

**JSON Format**:

{

command\_id: 0,

animation\_id: (Integer) (0 - 50)

display\_mode:(1- for scrolling, 0- static) How can animation be static? (Scrolling means the animation will be running but it will be moving from left to right and static means animation will be running without moving)

}

2. LED Custom Frames Transfer:

**Function**: To allow users to send the frames which they have made using the editor to the bag.

Method 1: LED Frames Sending

**JSON Format**:

{

command\_id: 1,

led\_frames: (hex string array)(eg: [‘0x1111111111111111’, ‘0x2222222222222222’ ...]),

intensities: (Integer Array) (This is for setting the intensity of each frame how bright the frame should look), Can you specify the expected value range for this parameter?(Intensity range will be from 0-100)

led\_ring\_str: (hex string array) (eg: [‘0xFFFFFF’, ‘0x000000’, …]),

display\_mode: (Integer) (0 - 1), (Display\_mode has two things 1 for making the animation scrolling and 0 for static.)

frame\_delay: (Integer Array) (This parameter tells after what time each frame should appear in other words it tells what should be the time delay between each frame in an annimation),

num\_frames: (Integer) (Number of frames in the animation)

}

Method 2: Text Sending

**JSON Format:**

{

command\_id: 2,

text: (String),

num\_chars: (Integer),

intensity: (Integer) (0 - 15),

frame\_delay: (Integer) (0 - 5),

led\_ring\_str: (Hex String) (eg: ‘0xFFFFFF’)

}

3. Mode Select:

**Function:** To Select the mode from the app.

**JSON Format:**

{

command\_id: 3,

mode: (Integer) (0 - 1)

}

**Modes:**

(0 - Navigation Mode OFF)

(1 - Navigation Mode ON)

4. Inner Illumination Control:

**Function:** To control the inner light in the bag

**JSON Format:**

{

command\_id : 4,

inner\_illumination: (Integer) (0 - 1) (0 - OFF, 1 - ON)

}

5. Secure Mode Control:

**Function:** To turn on/off the secure mode in the bag.

**JSON Format:**

{

command\_id: 5,

secure\_mode: (Integer) (0 - 1)(0 - OFF, 1 - ON)

}

6. Deep Sleep Control:

**Function:** To turn on/off the deep sleep mode in the bag.

**JSON Format:**

{

command\_id: 6,

State: (Integer) (0 - 1)(0 - OFF, 1 - ON)

}

7. BLE Beacons Address Update

**Function:** To send all the BLE Addresses of the beacons **to be tracked**. Send this **everytime** there is an update in the devices to be tracked. (Add/Enable/Disable)

**JSON Format:**

{

command\_id: 7,

addresses: (String array) (eg: [‘yy:yy:yy:yy:yy:yy’, ‘xx:xx:xx:xx:xx:xx’, …]),

num\_beacons: (Integer)

}

8. Update Settings:

**Function:** To Update settings to the bag.

**JSON Format:**

{

command\_id: 8,

direction\_led\_color: (Hex String) (eg: ‘0xFFFFFF’),

missingitem\_notif: (Integer array [3]), (eg: [0, 1, 1]), (Tells whether missing item notif should be enabled in vibration or ringing ) What will first “0” do, what will second “1” do, what will third “1” do as per the [0,1,1] order mentioned above (If you check our app screen you have vibration, audio and matrix so it is like this[vibration(0 or 1), audio(0 or 1), matrix(0 or 1)], 0-OFF and 1- ON in each mode whether the missing item notif should be ON or OFF status is sent)(Same applies for below secure notif and power notif)

secure\_notif: (Integer array [3]), (eg: [0, 1, 0]), (Tells whether secure notif should be enabled in vibration or ringing)

power\_notif: (Integer array [3]), (eg: [1, 1, 1]), (Tells whether power\_notif should be enabled in vibration or ringing)

vibration\_intensity: (int) (0 - 255),

ble\_scan\_interval: (Integer), (Beacon scanning interval)

schedule\_mode: (Integer) (0 - 1),

schedule\_time: (String array), ([schedule\_start\_time, Expected value and its format? An example would be better to understand. {”schedule\_time”:[‘5’,’37’]} in this 5–hours and 37-minutes.

schedule\_end\_time]),(There is a feature in app to set switch On time and switch off time which will make the bag ON and OFF automatically like our mobile phone) {”schedule\_end\_time”:[‘5’,’37’]} in this 5–hours and 37-minutes.

}

9. Power Settings and Manual Charge:

**Function:** To update the power settings to the bag.

**JSON Format:**

{

command\_id: 9,

charge\_mode\_doc: (Integer) (0 - 1),

charge\_capacity\_doc: (Integer)

}

10. Time Update:

**Function:** Periodically sending current time to the bag.

**JSON Format:**

{

command\_id: 10,

time: (String) (When the app gets connected to the bag each time the time will be sent to the bag) Expected format??

Example: {“command\_id”:10,”get\_time”:[‘5’,’37’]} in this 5–hours and 37-minutes.

}

16. Navigation Update:

**Function:** Sending navigation update to bag.

**JSON Format:**

{

command\_id: 16,

navigation: (int) (0-straight, 1-left, 2-right, 3- U-turn, 4-Slight left, 5-Slight right)

}

**Straight, continue straight, round about continue straight-** Both the straps vibrates

**Left, circle left-** Left strap will vibrate continuously without any delay

**Right, circle right-** Right strap will vibrate continuously without any delay

**U-turn-** vibrate both straps with some delay

**Slight left lane, keep left-** vibrate left strap alone with some delay

**Slight Right lane, keep right-** vibrate right strap with some delay

21. Bag Status:

**Function:** Getting Bag Status.

**JSON Format:**

{

command\_id: 21,

All\_Update:1(Get Status of All) (Update status will provide you the status of inner illumination, secure mode, deep sleep, animation ID)

Please specify the format in which bag would like to receive the data from the phone. An example would be helpful

**Example format:**

s: (Integer) (0 - 1),(Secure Mode ON OFF)

m: (Integer) (0 - 1),(Mode)(0 - Navigation Mode OFF, 1 - Navigation Mode ON) (0 will represent secure mode).

i: (Integer) (0 - 1),(Inner Illumination)

d: (Integer) (0 - 1),(Deep Sleep)

A: (Integer) (0 - 50)(Animation Id)

}

**Bag Side:**

1. Missing Item Notification

**Function:** To alert phone in case an item is not found.

**JSON Format**

{

c: 11,

d: 1; (1 - Device missing Flag)

}

2. Secure Mode Disruption

**Function:** To alert phone in case bag is not secure while in secure mode.

**JSON Format**

{

c: 12,

z: (Integer) (0 - 1)(Zip alert)

m: (Integer) (0 - 1)(Motion detected)(This is when the bag is in secure mode and not in motion and all of a sudden someone tries to lift your bag the bag owner will be alerted)

}

3. System state

**Function:** To update the phone with system state after any update occurs.

**JSON Format**

{

c: 13,

s: (Integer) (0 - 1),(Secure Mode ON OFF)

m: (Integer) (0 - 1),(Mode)(0 - Navigation Mode OFF, 1 - Navigation Mode ON) (0 will represent secure mode).

}

**JSON Format**

{

c: 18,

i: (Integer) (0 - 1),(Inner Illumination)

}

**JSON Format**

{

c: 22,

d: (Integer) (0 - 1),(Deep Sleep)

}

**JSON Format**

{

c: 19,

A: (Integer) (0 - 50)(Animation Id)

}

4. Pollution Level

**Function:** To periodically update the phone with gas sensor values

**JSON Format:**

{

c: 14,

d: (float32)

}

5. Charge Level

**Function:** To periodically update the phone with charge dissipated level

Discharge data:

**JSON Format:**

{

c: 15,

p: (Integer) (0 - 1)()

}

**JSON Format:**

{

c: 20,

d: (float32) [current capacity]

}

Charge Data:

{

c: 17,

ch: (float32)

p: (Integer) (0 - 1)

}

Animation Indexes:

GIF Indexes:

0 - coffee battery

1 - univ

2 - star blink

3 - compass

4 - gps

5 - phone charge

6 - pingpong

7 - plane

8 - heart

9 - weather lightning

10 - running

11 - zip

12 - lock

13 - music

14 - yo

15 - radar

16 - smiley

17 - sunrise

18 - left arrow

19 - right arrow

20 - up arrow

21 - logo