# Aron
# Automatic Regulator & Operator Notion Device

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**Abstract—Future will be different and may be so different than we imagined. Time was all the same what changed is the speed that we acquired in our living and speed will be the core of the coming future. Why waste time in things that can achieved in fraction of a second. Yes there are plenty of things where we waste time which worth more anything. More the time we have, more we do and so more we accomplish.**
**By using Near Field Communication technology and Transistor Programming, what we achieve is a step to the future. The future where we can get our task done by our fingertip. A world where we save so much time that we feel to have more time to live. And the first step to the future is to make our homes switchless. Yes that's my vision, to make every home free from switches as they won't be required any more.**
**Aron is the device which will make it possible and make humans a step closer to coming future.**

***Index Terms*—Introduction, Methodology, Comparison, Discussion, Conclusion, Future Enhancement.**



## I. INTRODUCTION

Automatic Regulator & Operator Notion (Aron) Device is not just powerful enough to operate heavy task but also enough adequate to operate and regulate them automatically. So the name Aron. Aron at the design point of view is a very simple device but technically it performs heavy tasks.
Let us examine five problems and how Aron can help it.

- An Air Conditioner requires 10 minutes to cool a room. Suppose the user is out of his home and before leaving home he switched OFF A/C. When the user return home, he ON the A/C and wait for 10 minutes to get his room cooled. Aron can make the A/C automatically ON 10 minutes before the user reach home. The user when reach home, finds his room cooled.

- If user wants hot water then he has to ON the geezer. For this the user has to walk all the way to washroom. Aron can let the user do this without moving a inch.

- For using every electronic device the user has to ON the switch. Aron will remove switches from home and office. A home without any switches and the user's phone will control everything.

- If a user wants to regulate its TV channel or A/C cooling or just anything on an electronic device. The user the easiest can do is using a remote. Aron can let it be done by just voice commands. Any electronic gadget or device can be regulated and operated on user's voice command.

- A user has to put motion sensor do the door to get it opened automatically once someone is nearby. What if the door should be opened for some specific person or a group of person and not for others? This can be solved by Aron.

These are only five applications among thousands of applications that Aron can perform.
Three main point of Aron to be considered are.

- A user can install and program it easily into infinite number of devices as per his choice.
- It is very cost effective. It's not just cheap but will cut cost of switches from home and office.
- Security. The user will be total control over its devices and any outside interest into devices controlled by the user will not be entertained.

## II. METHODOLOGY

Automatic Regulator & Operator Notion (Aron) Device is a powerful package which is the future. It solves numerous numbers of problems and simply a lot more of them.
The Aron is a package of a hardware device and a software controller. The hardware device has to be connected to the user's home or office and the software shall be installed to user's phone or computer. The hardware device will be controlled by the software installed with user.
The device can be classified into two parts.

- Aron Hardware

- Aron Software Controller

Let us discuss them separately one by one.

*Aron Hardware*

Aron's Hardware section is the brain of the device which physically controls all applications of Aron.

Aron's Hardware is a very simple structure compatible for heavy applications. The Aron's Hardware makes a connection, physical or wireless with other devices that need to be controlled by Aron.

Let us discuss in detail the construction and working of Aron's Hardware.

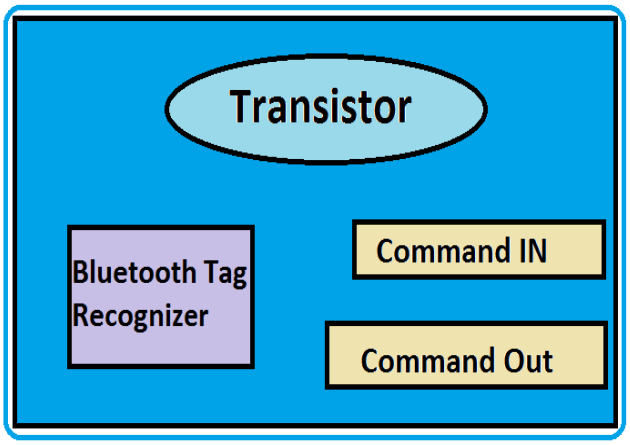
Construction: The Aron Hardware is constructed on a small metal box which will be acting as antenna to detect signal. The Aron Hardware basically consists of the following.

- Programmed Transistor: This transistor is the brain of the hardware section which decides how and when an action has to be taken.
- Bluetooth Tag Recognizer : This is the sensing section of the device which senses a device which is connected to Aron through
- Command IN Section: This part of hardware is responsible for the input of the command from user which later be converted into action.
- Command out Section: This part of the hardware is responsible for the output action from Aron. This part physically transfers the action to the respected device.

These are the key elements for the construction of Aron's hardware.

Other than these 5 key elements circuitry and Bluetooth tag is required. The circuitry between the hardware of Aron is simple. The transistor has a control line over all other three elements and these elements have a data line towards the transistor.

Working: The working of the hardware section can be further divided into two parts, the command input section and command output section.




*Command Input:*

This section basically depends on the user. The user needs to put a request to Aron through the Aron controller software. The user has to mention three things in request.

- The device on which the user wants control.
- What control or action the user wants on the above device.
- How long that is the time duration of the action on the above device.

This request is accepted at the command IN section which acts as a receiver. This receiver passes this request to transistor. The transistor then understands the request.

*Command Output:*

Here the request sent by user is monitored by the transistor. The transistor divides the request into three section namely D, A & T. D, A & T stands for Device, Action and Tim e.

Now Transistor passes control to Bluetooth tag recognizer (BTR). BTR check for the device in the list of paired devices and select the one that user is requesting for. BTR passes this information to Transistor. Transistor now stores this address into D.

After this the transistor monitor the action that user wants to perform. Transistor selects the preprogrammed function for the action. Transistor stores the link to this function into A.

Now the transistor stores the duration of time into T. After these steps transistor pass the control to the function chosen above. D and T will be input to A.

Now the function selects the device and requested action is performed on this device.

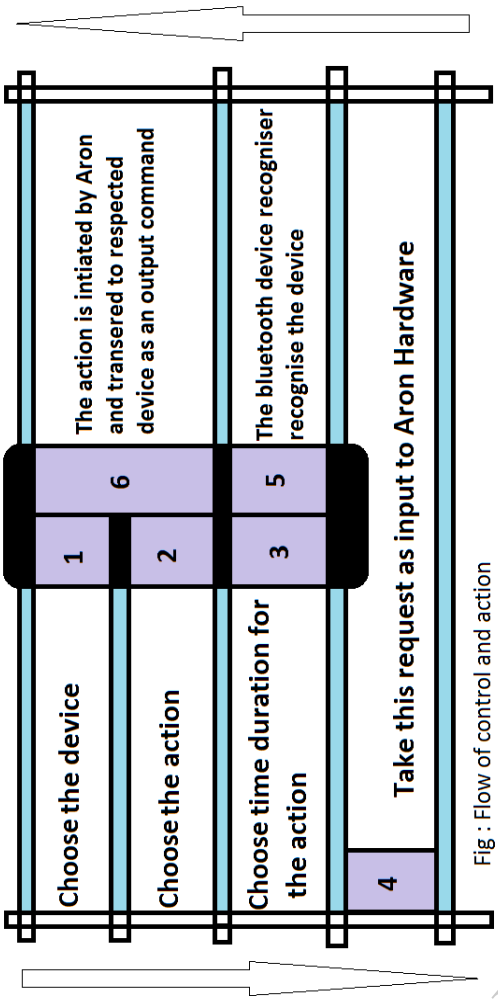



Fig : Flow of control and action



Now a question arises how the device is selected and how a device is controlled?

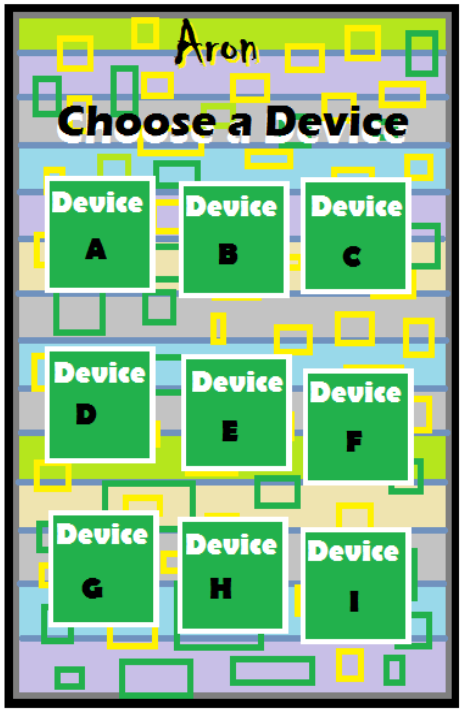
Each device will have a Bluetooth tag which will allow the Aron's software controller to pair with it. This way the device address will be stored in the software part of Aron. Now when the device address is passed to Aron's Hardware, the hardware fetches the requirement. Now the selected function will control the request sent by the user. The microcontroller which is connected to the transistor now comes to play. The function passes the address of device to microcontroller and microcontroller performs the requested action. For example the user wants to ON a bulb. The user selected a bulb and chose to ON it. The user also selected the time duration for 5 minutes. The function commands the microcontroller to pass current to the bulb whose address is passed earlier. After five minutes, the function (transistor) automatically command microcontroller to stop supply to this particular bulb.

Like this Aron hardware can control and operate devices with help of a microcontroller. Note that a microcontroller is only required if larger number of devices are connected to Aron. For smaller number of devices the ports at Aron will do the above requirement.

*Aron Software Controller*

Aron's software controller is the section which is totally responsible for the request of action to Aron. This section mainly has a user interface which let user to choose the device and the action to be taken on it. Aron's software controller is a multiplatform application which can be operated on a phone or on a computer.

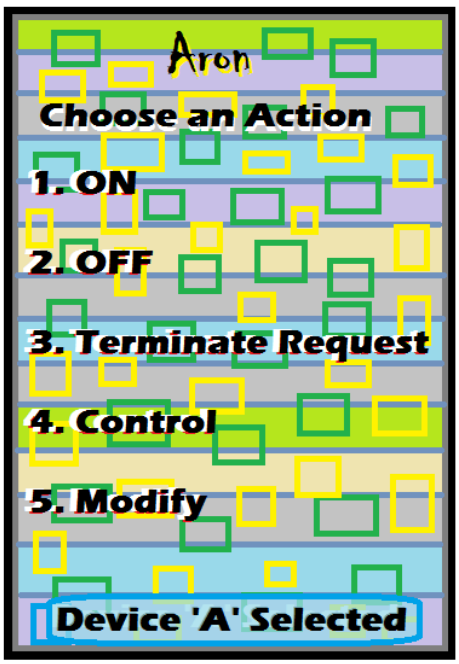
The software controller has three windows which let user to form a proper request.

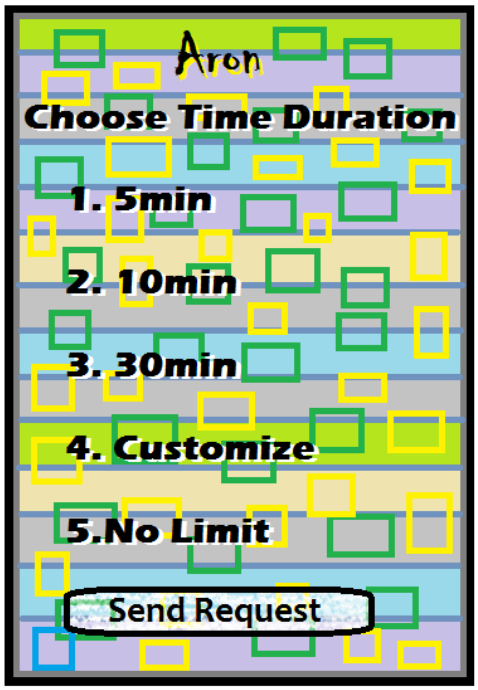



In the first window the user is asked to choose a device on which the operation will be carried out. Here the user has to choose one o the listed paired devices. Once user chose a device, the next window pops up. This window allow user to choose the action or operation that user wants to perform. User just has to click or touch one of the listed operations to continue. The user can even customize his own operations. After selecting operation to be performed on the device, the next window pops up.

This window allow user to choose the time duration for the operation to be executed on a respective device. The user can chose any time duration from the listed one or can customize his own time duration.

The user when selected these three elements, the request can be sent to Aron. This request in the form of packets will be transferred to Aron's hardware through Bluetooth medium.




## III. COMPARISON

The concept behind smart home and Aron is entirely different. Smart home is not just very expensive but also not versatile. Where Aron is as cheap as that any poor person can afford it. Aron need no motion gesture sensor in home which make it more acceptable. Smart home need sensors installed during construction of house and Aron can be installed anytime after construction. Aron can even be installed to old houses. Aron controls everything on software so it allows Aron to perform larger amount of operations on larger number of devices. Aron is customizable and a user can program it the way he wants though user interfaces on Aron's software controller.

## IV. DISCUSSION

This is Aron prototype which works for the given constrains. Aron can make enhanced smart home and smart office without effecting on budget. Its price allows every user to touch and feel the future. Aron saves so much time which can be utilized for more productive work. Best part of Aron is the ease of usage and fully customizable as per user's requirement. There are very few inventions or works related to Aron but one which resemble with the working of Aron is the concept of Smart Home.

But how the way working is done and the operations on these devices are totally different. In smart home all devices are controlled by either motion sensor or special gesture sensor. For example in Smart Home the door get open automatically when the user comes near the door and lights get ON when the user claps

## V. CONCLUSION

Aron is undoubtedly the future where everything can be done by a fingertip or a voice command. It is cost effective and compatible to any old or new devices. This Aron Prototype can be made more superior and more compatible. Voice command facility allow user to use a Bluetooth voice receiver to provide their request to Aron. A GPS and an internet network connection can be installed to Aron which let users to operate Aron at a greater distance.

## VI. FUTURE ENHANCEMENT

Aron can be developed further into a complete smart home. Aron is the future where we can control any electronic device with our mobile phone or a computer based software. The Aron in future can be developed to control devices by complete voice commands. Even internet and multimedia can be controlled by Aron in future.

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